C45
7:80/2
c.2

March • April 2016 | $2.50

WILDLIFE IN NORTH CAROLINA

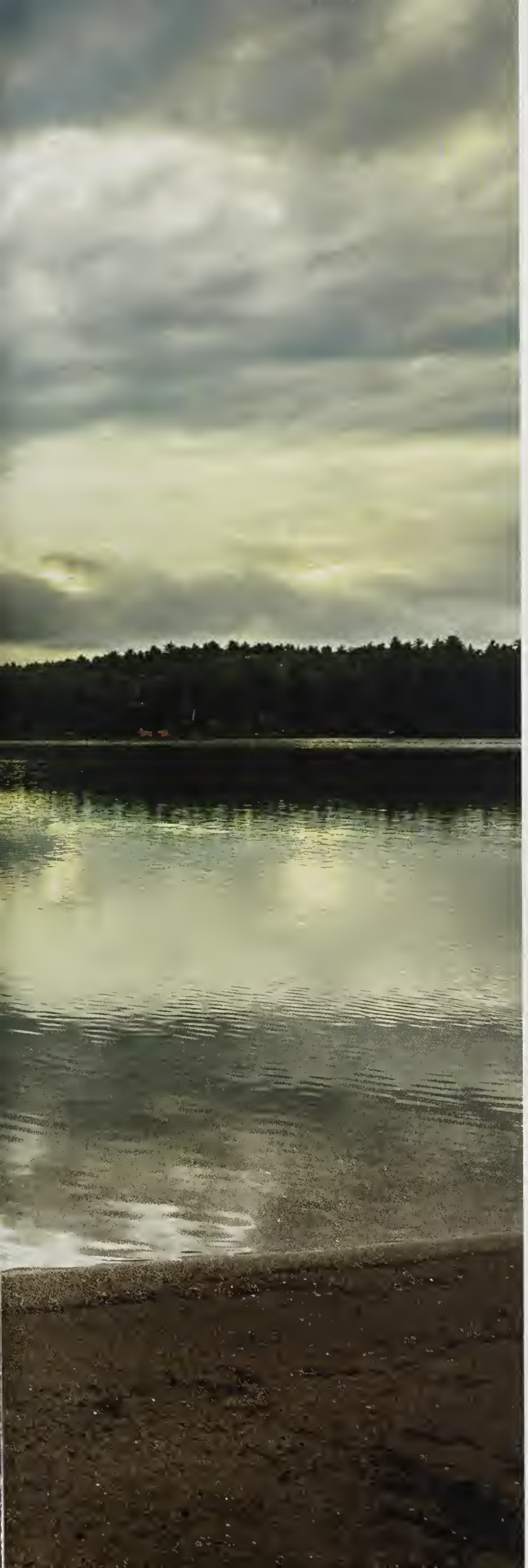
NORTH CAROLINA Wildlife RESOURCES COMMISSION

N.C. DOCUMENTS
CLEARINGHOUSE

MAR 22 2016

STATE LIBRARY OF
NORTH CAROLINA
RALEIGH

An empty kayak signals the end of the day at Lake James. The lake's namesake, James Buchanan Duke, was a tobacco tycoon and benefactor of Duke University. **PHOTOGRAPH BY N.C. DIVISION OF PARKS AND RECREATION.**



Volume 80 | Number 2

WILDLIFE IN NORTH CAROLINA

contents | march • april 2016

FEATURES

4 **A NEW CENTURY FOR STATE PARKS**
written by John Manuel
Celebrations are in the works as North Carolina parks turn 100.

12 **TURKEY SEASON TUNE-UP**
written by Jacob Hacker
Don't wait until the last minute to get ready for turkey season. Follow six simple steps that can be done in your own living room to become a better turkey gunner.

16 **FOR WILDER TROUT**
written by Neil Norman | illustrated by Jeff Kennedy
A writer's realization that not all fly-fishing spots are created equal.

22 **THE LAST GIANTS**
written and photographed by Todd Pusser
A pair of "hunters" lead the search for champion trees in North Carolina, from a 100-foot longleaf pine to a massive bald cypress.

30 **PICKING THE RIGHT FLY TO TIE**
written by Marty Shaffner
Beginner's luck won't get you far in fly-fishing. Instead, knowing which fly to use is key to success for new anglers.

DEPARTMENTS

2 EDITOR'S NOTE
3 LETTERS
36 WILD NOTEBOOK
40 BACK PORCH
43 NATURE'S WAYS
44 OUR NATURAL HERITAGE
45 OUTDOOR MOMENT

Cover: The sun sets over the national champion Darlington oak (*Quercus hemisphaerica*) growing in an open field in Edgecombe County. PHOTOGRAPH BY TODD PUSSER.

Wildlife in North Carolina is the official educational publication of the North Carolina Wildlife Resources Commission. It is dedicated to the sound conservation of North Carolina's wildlife and other interrelated natural resources and also to the environment we share with them.

EDITOR'S NOTE

I only got to call Bob Curry a colleague for a month after I took over as editor of *Wildlife in North Carolina* last December, but that was more than enough time to discover the impact he had on the Wildlife Resources Commission and management and conservation efforts in North Carolina.

MELISSA McGAW/NCWRC

Curry retired as chief of inland fisheries in January, ending a 31-year career with the Commission. He arrived here in 1984 after serving as a wildlife officer in Tennessee and worked his way up the ranks to division chief in 2004. Along the way, Curry made his mark by growing the number of fisheries and hatcheries throughout the state, focusing on community outreach and developing opportunities for youth participation, and encouraging staff to take an out-of-the-box approach to challenges and problems. He helped resuscitate Eastern brook trout populations in mountain streams, played a key role in launching the John E. Pechmann Fishing Education Center, and led the Commission's efforts to educate anglers about various fish diseases.

"Most of us treasure our time afield as a welcome respite from the working world," said T. Edward Nickens while presenting Curry the North Carolina Wildlife Federation's conservationist of the year award in September 2014. "And all of us owe a debt of gratitude to men like Bob Curry, whose time afield is spent working hard so the rest of us can play."

Curry is a people person, who takes pride in learning from other agencies and groups, and sharing that with his staff. "I made a lot of friends and met a lot of people who were dedicated to the work we were doing and I would try and pass that information along to staff and get them engaged too."

He also believes in grassroots education, like getting children and parents involved in fishing. He was a regular at the Pechmann Center. "He loved kids. Youth and outreach were a big part of what he did," said Inland Fisheries Program Manager Christian Waters. "Not only was he interested in successful management and conservation, but sharing that message was a big part as well . . .

"I'm sure he would say that he had a great staff and that the staff did a lot, and absolutely it did. But many of these things were done under his watch. Hatchery improvements and management initiatives like stocking fish were all done while he was chief."

Wildlife in North Carolina (ISSN 0043-549X) is published eight times a year by the N.C. Wildlife Resources Commission, 1751 Varsity Drive, Raleigh, N.C. 27606. Periodicals postage paid at Raleigh, N.C. and additional mailing offices. Subscription rates: one year $12, three years $30. All foreign subscriptions are $28 per year. Payable by U.S. Postal Service money order or U.S. bank cashier's check. All orders must be prepaid. Please allow 6 to 8 weeks delivery on new subscriptions and address changes. POSTMASTER: Send address changes to Circulation Manager, 1710 Mail Service Center, Raleigh, N.C. 27699-1710. Address all correspondence regarding subscriptions to Circulation Manager. For subscription help, dial 1-800-786-2721. Articles in *Wildlife in North Carolina* may represent the personal views of authors, and do not imply endorsement by the N.C. Wildlife Resources Commission. *Wildlife in North Carolina* is available on audio cassette through the Department of Cultural Resources, Library for the Blind and Physically Handicapped, Raleigh, N.C., (919) 733-4376. **The N.C. Wildlife Resources Commission is an equal opportunity agency.** Copyright©2016 by the N.C. Wildlife Resources Commission. No portion of this magazine may be reproduced by any means without the written consent of *Wildlife in North Carolina*.

WILDLIFE IN NORTH CAROLINA

MARCH • APRIL 2016 VOLUME 80, NUMBER 2

STATE OF NORTH CAROLINA
Pat McCrory Governor

NORTH CAROLINA WILDLIFE RESOURCES COMMISSION
John Litton Clark Clinton, Chairman
John T. Coley IV Holly Springs, Vice Chairman
Thomas A. Berry Greensboro
Joseph (Joe) Budd Winston-Salem
Vernon (Ray) Clifton Jr. Clarkton
James W. Cogdell Norwood
Mark R. Craig Greensboro
Richard Edwards Wilmington
Thomas L. Fonville Raleigh
W. Neal Hanks Jr. Asheville
Nat T. Harris Burlington
Michael Johnson Hickory
Dean Proctor Hickory
Wes Seegars Goldsboro
Timothy L. Spear Creswell
Garry Spence Charlotte
John A. Stone Jackson Springs
Brian White Manteo
Landon Zimmer Wilmington

Gordon Myers Executive Director
Kyle Briggs Chief Deputy Director
Erik D. Christofferson Deputy Director of Operations

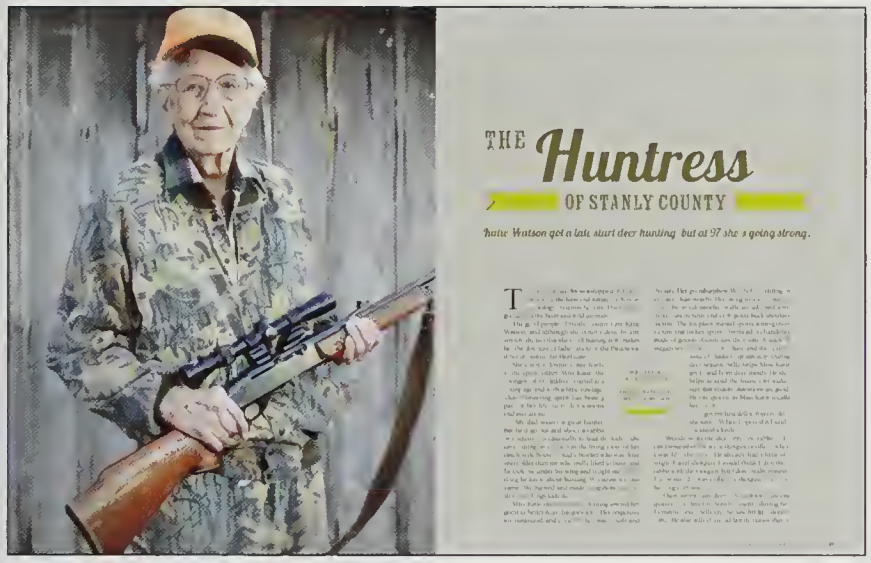
DIVISION CHIEFS
Col. Jon Evans Enforcement
David T. Cobb, Ph.D. Wildlife Management
Kristopher S. Smith Wildlife Education

MAGAZINE STAFF
Josh Leventhal Editor
Marsha Tillett Art Director
Mike Zlotnicki Associate Editor
Bryant Cole Graphic Designer
Amy Friend Graphic Designer
Melissa McGaw Staff Photographer
Jackie Bullock Copy Editor

CONTACT THE COMMISSION
ncwildlife.org

Report violations of hunting & fishing laws 1-800-662-7137
Boat registration & titling 1-800-628-3773 (NC VESSEL)
Seasons for migratory game birds 1-800-675-0263
Purchase a license 1-888-248-6834 (2HUNTFISH)
Report big game harvests 1-800-446-8663 (I GOT ONE)

To subscribe to *Wildlife in North Carolina* magazine call 1-800-786-2721 or visit ncwildlife.org



A Great Outdoors Life

The November/December 2012 issue of *Wildlife in North Carolina* magazine included an article about my great aunt Katie Watson ("The Huntress of Stanly County"). It is with great sadness and loss that I share news of Katie's passing.

Katie Barringer Watson was 100 years old. She was born Sept. 26, 1915 and died on Jan. 3, 2016. The daughter of the late Charlie Alexander and Maggie Culp Barringer, Katie had six brothers and four sisters and was a lifelong member of Wesley Chapel United Methodist Church in Misenheimer.

Katie worked in the textile industries in Concord and Richfield until she retired. Katie worked liked most women in the textile industry until World War II started. Then, with all the men off to war, Katie became a fixer or mechanic. She had to repair or perform maintenance on all of the equipment in the mill. She was very mechanically inclined and used those same skills at home. She worked on her tractor, car and truck — she could repair anything that was broken.

Katie was known for her love, passion and desire to go hunting. This love for hunting started as a child and grew with her through her adult life then into her senior years. Katie hunted quail until she was in her early 80s. The doctor told her when she was 70 that she didn't need to be walking that much. The doctor said that it was too hard on her knees. It only took her another 10 to 15 years to stop hunting quail after the doctor's advice.

Deer became her main focus after she turned 80. She killed 49 deer after she turned 80, shooting her last one in December 2013 at the age of 98. She shot this deer with a Remington Model 700 .243 at 75 yards. I know this because I was sitting with her when she squeezed that trigger one last time. This is a moment in time that stands still for me. I have her NCWRC Big Game tags that record that last deer. I also have the empty .243 casing.

Katie was an avid fisherman. She was an expert with a fly rod. When the big shellcrackers and bream would start bedding, she would empty the beds. You did not want to fish the ponds after she had been there.

Katie had a goal to live to 100, which we celebrated last September. Katie didn't have any children of her own, but you couldn't tell that at her birthday party or her funeral. Katie will be missed but her legacy, memories and spirit will live on for many generations.

I would like to thank *Wildlife in North Carolina* for the article about her. A special thanks to Mike Zlotnicki and Melissa McGaw for the efforts and time that they spent with Katie. She was proud of that article and she didn't hesitate to show off that edition.

Wes Sells
Richfield

Yearning For My Birds

I read with interest and nostalgia Jim Dean's article ("The Timberdoodle Option") in the November/December 2015 issue. It brought back memories of my earlier life (I'm now 76) in rural lower Montgomery County.

Quail were as common as doves at that time. It was not unusual to see a mother quail scurrying around in our vegetable garden with her little speckled cottonball chicks on toothpick legs following. Each would eventually receive juicy worms and beetles from their mama as she fed them and taught them to forage. Later, we would see coveys fly over our fields and wonder if they were the now-mature chicks that frequented our garden.

I lived here until I married and moved away with my minister husband for over 45 years but returned in 1997 for retirement. Things have changed — no quail and no doves. A pair of quails visited our yard until four years ago and a pair of doves until this year. I miss them. Time brings change, but does not erase the memories of special things, like the quail's call and the dove's song and the joy of observing them close up. Does everyone not yearn for that pleasure again?

Patsy Freeman
Mount Gilead

More Raves for Raver

Thank you very much for the article in the November/December 2015 edition of *WINC* on Duane Raver ("North Carolina's Wildlife Artist"). I was first exposed to Mr. Raver's artwork in the 1970s and '80s when my grandmother gave me a gift subscription to *WINC*. I fondly remember older copies of the magazine from the 1960s she kept around the family cottage up on Kerr Lake (Buggs Island), and his handywork was prolific in those early editions. I have maintained that gift subscription to *WINC* to this day . . . even though we have moved away from N.C.

Mr. Raver is truly an icon when it comes to wildlife art. And he is a better person than an artist. I recently worked with Mr. Raver to use his fish identification artwork in a book I published on freshwater striped bass fishing, "Fishing for Reservoir Stripers, A How-To Handbook." I wanted to show readers the differences between striped bass, hybrid striped bass, white bass and white perch. I could have easily chosen to just take photos. However, Mr. Raver's anatomically correct fish artwork is so much more pleasing to the eye! It adds greatly to the handbook. And Mr. Raver went out of his way to help me get what I was looking for.

John M. Sawyer Jr.
Seneca, S.C.

write us *Letters should be sent via e-mail to* **letters@ncwildlife.org** *or through regular mail to Letters,* Wildlife in North Carolina *magazine, 1712 Mail Service Center, Raleigh, NC 27699-1712. Please include your name, address and daytime phone number. Letters chosen for publication may be edited for clarity and length. Editor Josh Leventhal may be reached at 919-707-0177 and Associate Editor Mike Zlotnicki at 919-707-0175. To subscribe call 1-800-786-2721.*

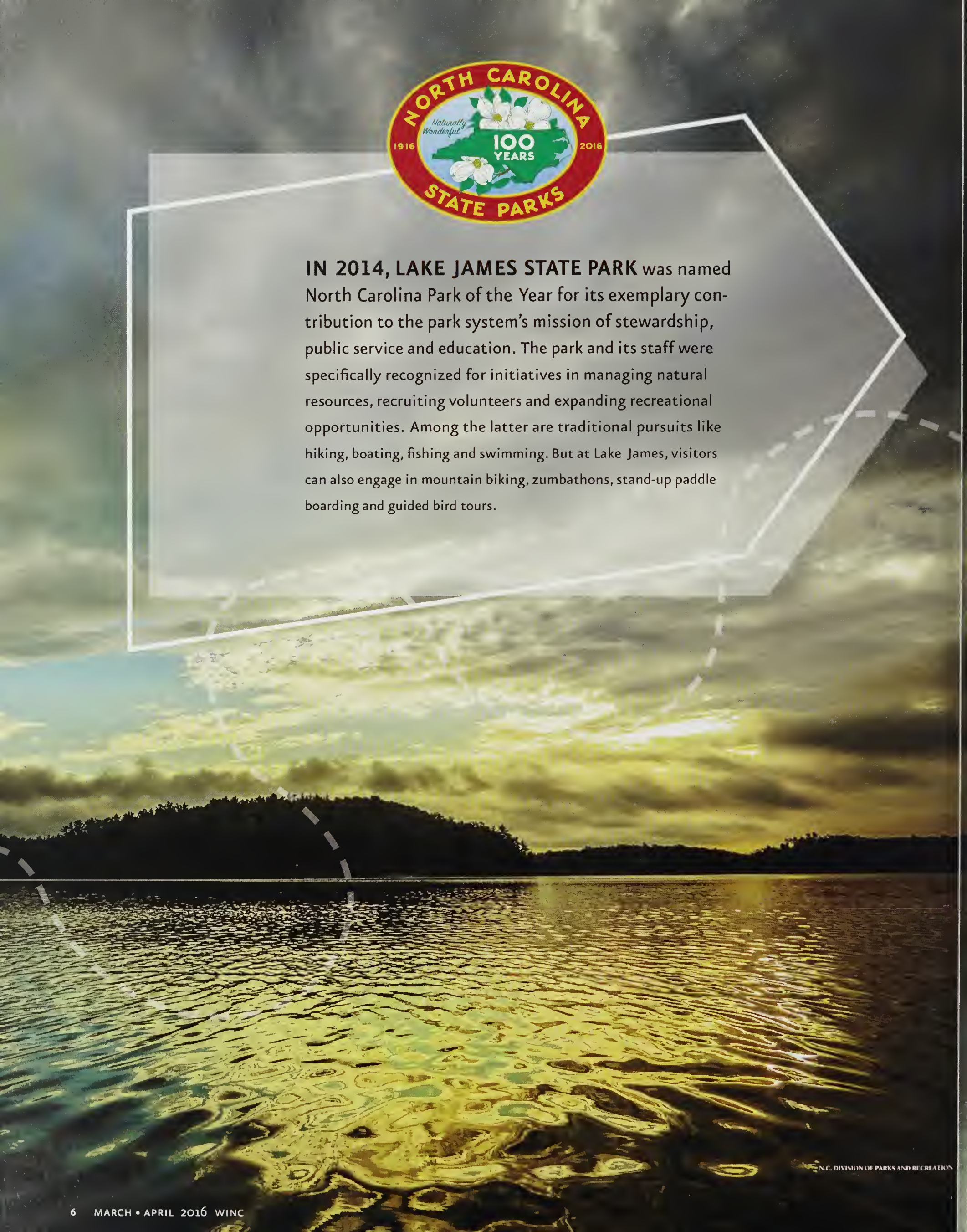
SOUTH MOUNTAINS STATE PARK

TODD PUSSER

A New Century for STATE PARKS

Written by John Manuel

Celebrations are in the works as North Carolina parks turn 100.



IN 2014, LAKE JAMES STATE PARK was named North Carolina Park of the Year for its exemplary contribution to the park system's mission of stewardship, public service and education. The park and its staff were specifically recognized for initiatives in managing natural resources, recruiting volunteers and expanding recreational opportunities. Among the latter are traditional pursuits like hiking, boating, fishing and swimming. But at Lake James, visitors can also engage in mountain biking, zumbathons, stand-up paddle boarding and guided bird tours.

N.C. DIVISION OF PARKS AND RECREATION

N.C. DIVISION OF PARKS AND RECREATION

N.C. DIVISION OF PARKS AND RECREATION

N.C. DIVISION OF PARKS AND RECREATION

More than 15 million visitors frequent North Carolina state parks each year, enjoying everything from old-fashioned canoeing to more modern kayaking and paddle boarding. Camping is popular at most state parks, including this one at Lake James State Park.

Welcome to the modern incarnation of North Carolina state parks.

This year, the state park system commemorates its 100th anniversary; the first park was established at Mount Mitchell in 1916. Celebrations are being held at each of the 41 state parks, with major events at Mount Mitchell and Fort Fisher.

Indeed, there is much to celebrate.

Under the direction of the N.C. Division of Parks and Recreation, the system has grown to include 41 parks, plus associated recreation areas, natural areas, lakes and trails totaling 225,537 acres. Visitation has leapt from 4.2 million people in 1972 (the earliest date for which records are kept) to more than 15 million today.

In keeping with the division's mission of protecting North Carolina's natural diversity, the park system includes every ecological type found in the state, including sand dunes (Jockey's Ridge), swamp forest (Dismal Swamp), longleaf pine forest (Weymouth Woods), lowland and upland hardwood forests (Lumber River, W. B. Umstead) and spruce-fir forest (Grandfather Mountain). Key historical sites have been preserved (Fort Fisher, Fort Macon), as have iconic geological features (Pilot Mountain, Chimney Rock).

A second part of the division's mission is to educate citizens about the state's natural resources. To this end, staff and volunteers at every park conduct guided tours and classes on a variety of subjects, ranging from mushroom identification to star gazing. School groups fill the visitation calendar during the fall and spring. Many visitor centers house their own museums, though the emphasis is increasingly on getting people outdoors to experience the natural world.

The division's third mission is to promote quality recreation. These activities are as varied as rock climbing at Stone Mountain to hang gliding off of Jockey's Ridge. With the recent addition of the Mountains-to-Sea Trail, people can now walk 1,150 miles of roads and trails from the Outer Banks to the Smoky Mountains.

A Lake For All Seasons

The expansion of recreational opportunities may be the most significant accomplishment of the state park's system, and few exemplify this more than Lake James. The 6,800-acre lake has been in existence since Duke Power dammed the Catawba and Linville rivers in the early 1900s. Owners of private homes along the southern shore have long enjoyed access to the lake, but it was only with the establishment of the state park in 1987 that the general public could share this privilege. Even then, activities in the 500-acre park were pretty much limited to boating, swimming and sunbathing on a small beach.

TODD PUSSER

Aquatic vegetation like this maidencane in Lake Waccamaw provides habitat for fish and other pond dwellers. One of the largest Carolina bays in the state, Lake Waccamaw covers more than 9,000 acres and has 14 miles of shoreline. The state park features a 700-foot-long boardwalk perfect for wildlife viewing and fishing, and more than seven miles of trails for hikers.

In 2005, the park added 2,000 acres in what is known as the Paddy's Creek area following a $12 million gift from Crescent Resources LLC and $18 million from the state. The state built a 700-foot-long swim beach, a large bathhouse, picnic areas and 15 miles of hiking and mountain biking trails. The beach is the site for numerous summertime activities, including zumbathons (charity events that incorporate a popular aerobic dance activity) and yoga. The park rents canoes, kayaks and stand-up paddle boards. The public has access to 30 boat-in campsites, where they can spend the night gazing at stars.

Lake James regularly draws visitors from Boone, Charlotte, Asheville, Morganton and Marion—as well as the rural areas in between. It also attraets a diverse mix of residents.

"In summer, around 50 percent of the beaehgoers are Hispanic," Lake Jamcs State Park Superintendent Nora Coffey said. "There are also large numbers of Hmong people, who were resettled herc from Vietnam after the war, as well as Russians and Ukrainians from Asheville."

Of all the park's resourees, none exceed the popularity of the mountain biking trails. Three single-track, or one-way, loops of varying length and difficulty wind through the mixed hardwood and pine forest bordering the lake. On any given day, a collection of young and old riders can be seen in colorful regalia hailing from all over western North Carolina.

"This is the only place around that has trails where I can take people like my son," said park regular Jeff Bryan of Nebo. "The other trails in this part of the state are too difficult for beginners."

Mountain biking has become popular throughout the North Carolina park system and has helped boost visitation in the normally slow winter months.

"I'd say easily 60 percent of our visitation in the winter and swing months is from mountain bikers," said Jamie Cameron, ranger at Lake James. "We love it, because it kceps us busy in the normally slow months."

The success of mountain biking at Lake James and other parks is due in large part to another key aspeet of the modern era—the extensive involvement of volunteers. Though the trails at Lake James were designed and built by a state eontraetor, maintenance is now largely done by a volunteer group known as the Northwest NC Mountain Bike Alliance.

"The Alliance has a local crew in the Morganton arca that rides the trail all the timc," said Paul Stahlschmidt, president of

TODD PUSSER

N.C. DIVISION OF PARKS AND RECREATION

TODD PUSSER

MELISSA MCGAW / NCWRC

MELISSA MCGAW / NCWRC

MELISSA MCGAW / NCWRC

the alliance. "We have a volunteer agreement with the state park that allows us to do maintenance work in the trail corridor. We are also working closely with the state park to do long-term planning that includes more trails."

Helping Hands

Volunteer labor has been especially valuable for the creation of the Mountains-to-Sea Trail (MST). In 2014, volunteers contributed 29,000 hours of labor, including the construction of bridges, trails and campsites. Some of the most active volunteers on the MST are scout troops, who take on special projects to earn merit badges.

Eagle Scout Harrison Hall, of Elkin, built a 40-foot bridge over nearby Grassy Creek as his project, something that would have cost tens of thousands of dollars if built by a private contractor.

Of all the volunteer groups supporting the state parks system, none is more important than the Friends of State Parks (FSP). Incorporated as a non-profit in 1978, FSP's mission includes coordinating a volunteer workforce to support programs in the parks, raising money and/or leveraging private funds in pursuit of individual projects, and lobbying state government to provide a dedicated source of funding.

Top left, clockwise: A diverse ecosystem at Merchants Millpond State Park is home to creatures big and small, like a river cooter sunning on a log and oversized cypress trees covered with Spanish moss. Hikers should stick to the trails in state parks, even if cottontail rabbits venture off to feed in a thicket. Tours are available at most parks, like the one Ranger Noelle Torrington leads with a family of birders at Dismal Swamp State Park. Mountain biking is more accessible at many state parks thanks in part to volunteer groups that help maintain trails.

LEAVE THE CAR IN PARK AND LACE up your hiking boots, for the best way to take in the natural beauty of North Carolina is by foot along a 1,150-mile route that stretches from the Smoky Mountains to the Outer Banks.

The Mountains-to-Sea Trail, a part of the North Carolina State Parks system that benefits from an active and passionate volunteer base, zig-zags across 37 counties and a diverse landscape. It passes through three national parks, three national forests and two wildlife refuges. Hikers walking the trail cut through game lands, traverse mountain peaks, follow rivers and find stops at 24 historic sites and 25 small towns.

"People love it. People who grew up in North Carolina say that they thought they knew a lot about the state, but hiking it is a way to understand it in a new way," said Kate Dixon, executive director of Friends of the Mountains-to-Sea Trail, a volunteer group whose efforts include fundraising, trail blazing and mapping of the trail.

"When you are actually out hiking, you really get a sense of how incredibly diverse (North Carolina) is and of some of the amazing natural and cultural and historic sites there are throughout the state."

The Mountains-to-Sea Trail was first proposed in 1977 by Howard Lee, then the state secretary of the Department of Natural Resources and Community Development, during a North Carolina Trails Committee symposium. The trail slowly began to take shape over the next two decades, incorporating land from national, state, city and county parks as well as private landowners, before officially becoming designated a state park in 2000.

Roughly 620 miles of the trail have been completed, with the remainder of the 1,150 miles being connected through country roads. Dixon said her group adds roughly 10 to 15 miles of trails each year, including stretches of the Coastal Crescent Trail along the Neuse River in Eastern North Carolina that debuted last April.

Though over 60 people have hiked the trail from end to end since its inception, including 13 people in 2015, most hikers prefer to take it on in more manageable, daily outings. The Friends of the Mountains-to-Sea Trail list detailed day-hike options with maps throughout the trail on its website (ncmst.org). The parts of the trail most heavily used, Dixon said, are around Asheville and the Triangle, with the latter featuring 105 continuous miles. Dixon recommends those interested in multi-day hikes visit the trail in the western part of the state along Wilson Creek in the Pisgah National Forest, where the trail is most remote. Other popular portions of the trail that Dixon suggests visiting include the Middle Prong Wilderness within the Pisgah National Forest; a stretch of trail that parallels the Blue Ridge Parkway from Blowing Rock to Sparta and offers some of the best views on the trail; and the Holly Shelter Game Land area along the Coastal Crescent Trail.

Camping areas designed for hikers were built along Falls Lake in 2014 in conjunction with the N.C. Wildlife Resources Commission, and have been well-received by visitors, Dixon said. Plans are in the works for a similar camping spot on the route through the Angola Bay and Holly Shelter, she said.

—Josh Leventhal

41 STATE PARKS

225,537 ACRES

ANNUAL VISITORS

1972: 4.2 MIL

2015: 15 MIL

FSP operated exclusively as a statewide organization for many years, but it is now focused on developing local chapters affiliated with specific parks. There are 26 such chapters in North Carolina, and FSP's goal is to create one for every park.

At Lake James, the local FSP chapter has helped purchase equipment, such as stand-up paddle boards, not allowed by state funding. It has funded lifeguards to go through waterfront training. It helped build picnic sites at the Linville Gorge Overlook. And it checks in campers six-to-eight hours a day, five days a week.

"Our volunteer hours have increased 400 percent in the last year," Coffey said. "I get people asking me all the time how they can help. We're still learning how to utilize volunteers."

Of course, volunteers can only do so much. The system needs state funding to pay the core staff, maintain facilities, provide services and purchase additional property. The system has endured cuts since the recession began in 2008, including the loss of a dedicated source of funding for the Parks and Recreation Trust Fund. Friends of State Parks has been lobbying the legislature to reinstate dedicated funding, a move that has received bipartisan support.

Meanwhile, Gov. Pat McCrory has signed the $2 billion Connect NC bond proposal, which includes $75 million for improvements to state parks. The state also has its eye on potential new parks, as well as enlargement and infilling of existing parks.

Looking Ahead

What are the division's goals for the next century? Top of the list, according to N.C. Division of Parks and Recreation Director Mike Murphy, is acquiring targeted properties, particularly inholdings.

"Most people don't realize it, but many of our parks have private inholdings," Murphy said. "We have a master plan for each park, which identifies properties we'd like to acquire. Infill is especially important."

Murphy would also like to make better use of the central reservation system. "We will be instituting dynamic pricing (for campground reservations) in the near future," Murphy said. "Prices will go up during high-pressure times, such as summer weekends, and down during periods of lesser demand."

As the state's population grows and open space decreases, public use of the state parks will only grow. If current trends continue, the parks will increasingly serve as places where people contribute time and energy to better the recreational and educational experience for others, as well as to absorb all that nature has to offer. ◆

John Manuel is a longtime contributor to Wildlife in North Carolina.

TURKEY SEASON TUNE-UP

Follow these six simple steps to become a better turkey gunner

Written by Jake Hacker

TOMMY KIRKLAND

As a firearms instructor in law enforcement, I've seen nearly every variation of mistake imaginable involving accuracy. A few simple tips I give to all shooters — handgun, precision rifle and shotgun alike — can boost your hunting accuracy and ability.

Turkey season is quickly approaching and every turkey hunter will soon be on their way to the range to pattern their favorite gun. Before you go, try these six tips to improve your shooting and see how much it helps prepare you for the hunt.

Inspect your firearm before using these tips. Make sure it is completely unloaded and keep it away from any ammunition. These tips will not require ammo, so keep your firearm away from any for safety's sake.

1 Get to know your gun

Light the candles, turn on some Barry White music and intimately get to know your firearm.

My gun of choice is the Mossberg 500 Turkey Thug 12 gauge. I top it with the Beard Buster sight from Dead Ringer. I can tell you everything about my gun. The barrel is ported with 16 one-eighth-inch diameter holes. I can disassemble and reassemble this gun in the dark. Heck, I can even tell you that my choke tubes have 23 threads.

Knowing your gun will make you confident in its abilities, and confidence is key to accurate shooting.

2 Keep it clean

MELISSA McGAW/NCWRC

Before patterning your turkey gun, and before every hunt for that matter, it needs a good thorough cleaning. I clean my Mossberg 500 every time I shoot it or hunt with it. Even if you cleaned your gun at the end of last season and haven't shot it since, it is still important to clean it again. Clean every inch and lightly oil every moving part of it. I've never heard of someone missing or a gun jamming from being too clean.

3 Use the right correct eye

Most of us know our dominant eye. However, I am increasingly surprised by the number of sportsmen shooting with the wrong eye. There are far more left-eye dominant people than left-hand dominant people. A shooter can be right handed and left-eye dominant, or vice-versa.

To double-check yourself, try this: Hold both hands out in front of you, arms fully extended. Make a triangle by overlapping your thumbs and crossing your fingers. Look through this triangle at a doorknob or light switch. Focus only on the object and slowly bring your hands toward your face. Your hands will naturally come back to one eye — this is your dominant eye.

4 Flip the switch

Any handgun enthusiast will tell you that trigger management is vital to accuracy. As a firearms instructor, I agree wholeheartedly. Most of us shotgun hunters never give a second thought to our trigger finger. This exercise will dramatically improve your trigger management.

Double-check that your weapon is empty and no ammunition is around. Sitting on your favorite chair, aim down your sights at a light switch in your house. Gently pull the trigger until you hear the click of the firing pin. If at any point your sights come off the light switch, then you have poor trigger management.

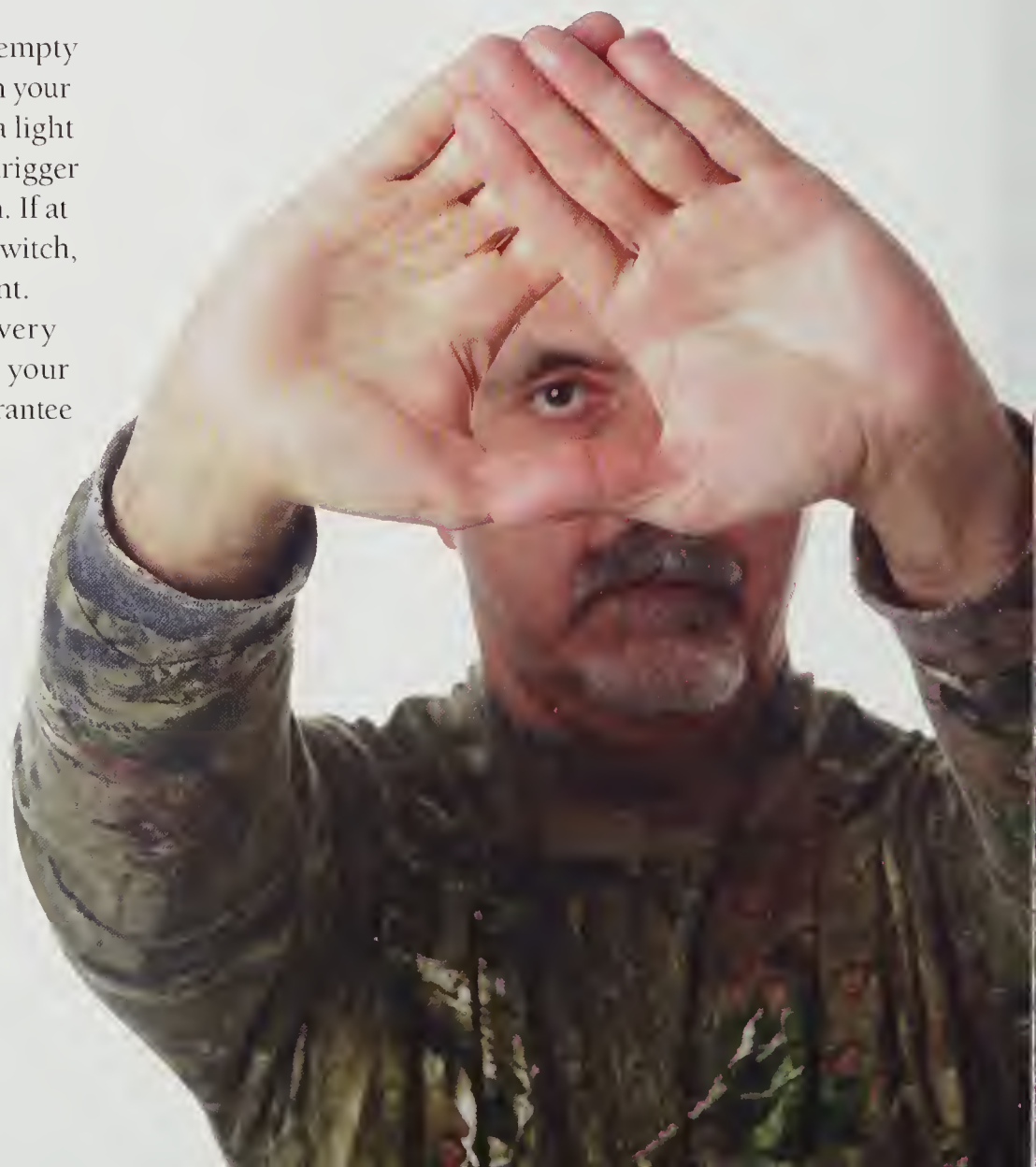
Practice holding the gun firm at every point, control your breathing and fire your firearm with your FINGER ONLY. I guarantee that you will see fast improvements.

5 Become one with the gun

Last year, I was able to harvest a monster, 30-pound Eastern tom with 11¾-inch beard and 1 ½-inch spurs. He snuck up behind me and busted me peeking out of the corner of my eye. I stayed focused on him and swung the gun 180 degrees in an instant to make the shot.

I would've missed this bird had I not practiced being one with my gun. A firearm should be an extension of your arms. After a bit of practice, you should be aiming dead center at your target without looking at your sights. Here's how:

Sit or stand in the most cluttered room in your house or garage and hold your gun in the ready position, but don't aim yet. Close your eyes and forget what's around you. Open your eyes and pick a target — a Coke can, a dog toy, a pencil . . . anything. Stare this item down. Then, without moving your head or eyes, bring the gun to your shoulder and the sights to your eye. You should now be aiming at that item. If you aren't, don't worry — just lower the gun and do it again. Pick a new item in the room and start over.



MELISSA McGAW/NCWRC

6 Gear up and hack!

Close the curtains, make sure no one is looking and suit up. Yes, I know turkey season is a ways off, but put on the leafy wear, the vest, the calls, the mask and the boots. It's important to make sure your gun still feels right. I'll even put a mouth call in and do some light clucks. Then sit against a wall and repeat steps 4 and 5.

Take the time to do these drills twice a week for five minutes each and you will see your accuracy improve. You'll have more confidence and improved trigger management and target acquisition without leaving your home or firing a round.

Try It. You'll be able to shoot straighter, farther and faster. ◆

Jake Hacker is a police firearms instructor and experienced turkey hunter. This is his first story for Wildlife in North Carolina.

MELISSA McGAW/NCWRC

2016 TURKEY HUNTING SEMINARS

The N.C. Wildlife Resources Commission and the National Wild Turkey Federation are offering 24 free turkey hunting seminars across North Carolina in March and April in anticipation of the upcoming spring turkey season.

The seminars, which will be conducted on introductory and advanced levels, will be held from 6:30–9 p.m. at 12 locations throughout the state. They are open to the public on a first-come, first-served basis to all ages. Participants 16 years and younger will need parental permission to register.

Online pre-registration for turkey hunting seminars is required. Register online at: ncwildlife.org/sbs. For more information, contact Deet James at: 919-707-0059 or walter.james@ncwildlife.org.

Feb. 29 (Intro) & March 1 (Advanced)
NC State University
SAS Hall Auditorium, Room 2203
2311 Stinson Dr., Raleigh, NC 27607
Wake County

March 2 (Intro) & March 3 (Advanced)
Tidewater Research Station
207 Research Station Road, Roper, NC 27970
Washington County

March 7 (Intro) & March 8 (Advanced)
Pasquotank County Extension Center 1209
McPherson Street, Elizabeth City, NC 27909
Pasquotank County

March 9 (Intro) & March 10 (Advanced)
Pitt County Extension Center
403 Government Circle, Suite 2
Greenville, NC 27834
Pitt County

March 14 (Intro) & March 15 (Advanced)
Cumberland County Extension Center 301
East Mountain Drive, Fayetteville, NC 28306
Cumberland County

March 16 (Intro) & March 17 (Advanced)
Brunswick County Extension Center
25 Referendum Drive, Bolivia, NC 28422
Brunswick County

March 21 (Intro) & March 22 (Advanced)
Onslow County Extension Center
4024 Richlands Highway, Jacksonville, NC
28540, Onslow County

March 23 (Intro) & March 24 (Advanced)
Bass Pro Shops
8181 Concord Mills Boulevard, Concord, NC
28027, Cabarrus County

March 28 (Intro) & March 29 (Advanced)
Tri-County Community College
21 Campus Circle, Murphy, NC 28906
Cherokee County

March 30 (Intro) & March 31 (Advanced)
Haywood Community College
185 Freedlander Drive, Clyde, NC 28721
Haywood County

April 4 (Intro) & April 5 (Advanced)
Caldwell County Extension Center
120 Hospital Avenue NE, Suite 1
Lenoir, NC 28645
Caldwell County

April 6 (Intro) & April 7 (Advanced)
Forsyth County Extension Center
1450 Fairchild Road
Winston-Salem, NC 27105
Forsyth County

FOR WILDER TROUT

A REALIZATION THAT NOT ALL FISHING HOLES ARE CREATED EQUAL

Written by *Neil Norman* | Illustrated by *Jeff Kennedy*

TO THE UNINITIATED, fly-fishing seems to be less about catching than fishing. Anglers habitually describe what they do with flies as an art and, above all else, a transcendent experience far removed from the indignity of fishless days.

However noble and right these sentiments might be, we let their loftiness take the place of truths too uncomfortable to admit: Fly-fishing, like any fishing, is a numbers game — and trout are at stake.

On the very best days, the numbers measure trout in pounds. Inches are used to mark great days. The rest of the time, the game is a simple tally. A fly-fisherman catches 14 fish and, when asked, he says 14 fish rounds up to "I don't know, a pretty good day. Caught a few. Probably around 20 or so?"

It is no true HEAVEN where the fishing comes so easily.

The morning we decided to forgo whatever license old angling clichés might warrant, my father and I agreed to keep ourselves honest by carrying a pebble for each trout we caught. We got back to the truck at midday, dropped the tailgate, ate our sandwiches and emptied our pockets of the catch. We tallied almost 85 pebbles between us.

The runs and tailouts were swollen with spring, but clear. They gave up an occasional March Brown, a scattering of smaller dun-colored mayflies, a few ginger caddisflies and some stoneflies.

We dressed our delicate, exacting imitations on chunky, size 8 streamer hooks with a black (or brown or dark olive) marabou tail, highlighted (or not) with a few lateral strands of black Flashabou (or copper or Krystal Flash), behind a chenille body of olive (sometimes black and, if nothing was left in the fly box, peacock herl), palmered with a grizzly hackle (or black or olive grizzly), finished behind either a black bead (or gold) or with a couple turns of brown (or gray) partridge at the head, tied back as a collar.

Working the fly downstream at implausible angles across the currents guaranteed a strike. If we missed the first time, they were bound to strike again. This was not a game of skill.

It was a Theodore Castwell kind of morning. Castwell is that inveterate old angler who awakens on the banks of an idyllic river where insects hatch and fish rise. A heavenly spot, he tells himself. Under the direction of the nearby river keeper, Castwell shoots the line perfectly to each riseform every time he casts, hooks every trout, and plays them deftly into the keeper's waiting net.

When the challenge begins to stale—somewhere around his 85th trout, I like to

imagine—Castwell reels in and turns to go upstream. But he finds himself rooted to the bank, compelled to hold his place by the river keeper who gestures for him to cast again. With every next cast and every next trout, Castwell recognizes his doom in his pleasure: It is no true heaven where the fishing comes so easily.

Our game was rigged, too. This stream, barely 15-feet wide and paralleling the road through a former farming community, should not have given up such a catch. But this was a newly designated Delayed Harvest stream, a testimony to North Carolina's three cold-water hatcheries and the million trout they produce annually. They supply fish to 1,000 miles of designated trout water.

We took out 85 trout under catch-and-release regulations, prior to the first weekend in June when roadside anglers would adopt their opening-day swagger a second time that season, rod in one hand and stringer full of pleasantly, improbably large trout in the other.

After sandwiches on the tailgate, we tossed the pebbles back into the creek and left Castwell on the banks. After the June opening and in the same pullout—as if our own river keeper bid us to hold our position—we worked the same exacting imitations in the same full runs and almost caught our limit. It was, "you know, a pretty good day. Caught a few. Probably around 100 or so?"

FOR WILDER TROUT

I moved from 1,000 miles of open creek and river to the confines of wilder waters. I gained the understanding that all small-stream anglers share: While more fish will be caught in stocked waters, and bigger fish will be caught on larger waters, no one ever caught an ugly trout in the small stream.

The small stream trout's beauty must be measured against its purpose. The alpha-predator has a longer jaw and larger eyes for catching prey, wider fanning pectoral fins and a tail ending in sharply pointed lobes to navigate the technical freestone currents. Nothing is hatchery-pen squared, and the stream-born colors are brighter. They wear the red slash that recalls a Californian heritage, a tight spread of black speckles from Caledonian lochs, or more beautiful still, a wide spatter of the black and red spots that camouflaged their Bavarian ancestors.

A short half-mile hike off the pullout near a stream in Pisgah National Forest, I lost a nice wild brown trout, maybe 16 inches, in a seam on the other side of the main current. I held him on long enough to see him clearly before he threw the hook, so I returned to the pullout regularly to see him again throughout the summer.

After a small rain, I parked and took my time gearing up in the pullout. Gearing up

is that exercise in routine that prepares us for the contemplative moment of choosing the fly. A cloud of dust came to a stop behind my bumper, crunching gravel and interrupting my meditations on the clarity and flow of the water against the possible hatch to choose the best fly.

Three teenage fishermen jumped out of the truck bed. Their gear was already rigged, and they were down the trail before I could see what they were fishing. Another got out of the passenger side and joined the other three before the driver stepped out, reached in for a fishing rod and again for a white Styrofoam cup advertising "Canadian Night Crawlers!" in green lettering.

"I think I've seen your car here before. A few times. Leave us any?" he asked as he closed the door.

"I was just getting ready to head down to the cr—"

"Well, they've really been hitting today. We been doing good anyway," he told me, lifting a stringer full of trout up out of the bed. "Good luck to you," he called over his shoulder, already down the trail.

For wilder trout, I took to the map, traced the blue lines that forked from the main, stocked stems and then hiked to where they forked again.

I cast as much for trout along these narrowest blue lines than for an ice age heritage, natives with a lineage uninterrupted in many small streams since the last glacial epoch. The glacial sheath receded up the Ohio River Valley, cooling the waters from the mountains to the coast, so that Arctic char could push south into saltwater estuaries and upstream into freshwater as the estuaries warmed, then farther still into the cool Appalachian headwaters as the sheath vanished.

Something about the light and shadow here, the convexity formed by the laurel canopy and narrower space between the banks perhaps, focuses sunlight into brilliant beams that scatter across the creek bed into a thousand vivid specks that brighten the trout's flanks and the vermiculation across their backs. For their tenacity, the speckled trout own these streams, holding court from the blue of their diminutive, plunge pool kingdoms.

Every angler who escapes to the headwaters feels some affinity with the speck,

PERFECTION, like the angling math, also changes in the places where no one else is looking.

burdened by the same upstream, up-mountain struggle. For their persistence, anglers also claim some dominion over the waters. We map our experiences onto the blue lines: There's that shallow spot, the "Rising Pool," where a decent fish will always come up to a fly on a drag-free drift. The "Log Hole," where a cast a foot-and-a-half down from the head will always draw a strike, but any closer, will snag on a submerged branch. And "That Spot," the deep hole where a couple of pinky-length specks always cost two flies. These little streams become our secret places. It is an intimacy that gradually feels like ownership.

FOR WILDER TROUT

I turned to the overgrown pastures that border derelict farmhouses and barns along the forks of the New River, just beyond where a tar-and-chip paved country road fades into loose gravel and thins into a pair of muddy tracks across the field. I turned to the old farm culvert.

Conservation groups have, rightly, stressed the detrimental effects these culverts have on spawning trout. Upstream, it collects the gravel they need to build their spawning beds. Downstream, it blocks their migration to historical spawning runs. I was after the trout populations that pooled up beneath the mouths of the culverts, and I found them in step-across, pasture tributaries.

The character of the culvert pool is simple and familiar. In a pastoral sprawl, a backcast is a pleasure, if it is necessary. More likely, an accurate roll cast suits the approach to a pool hemmed in by head-high shrubs and tangles of multifoliate rose. The angling game is strictly a springtime affair in these thoroughly unacknowledged places, when the pool is flush and the fish can feed.

The math changes at the mouth of the culvert. Eight inches of trout never rounds up to 10. Nor does the total catch. After all, who would believe it? A few trout under the culvert's mouth is a few trout. What angler would try to catch them, much less brag about it?

Here, three or more flies of the same species rising in conjunction constitutes a hatch. From the tail of the pool, looking up through the culvert and over the road in the evening sun, I saw a pair of yellow sallies fluttering like daylight fireflies. Another pair, probably stunned from pinballing against the upper arc of the culvert and the rush of the water, drifted down into the pool. One fluttered up. The other disappeared in a wrinkle on the smooth surface of the eddy.

I tied on a Partridge and Yellow, and laid out the perfect cast. Perfection, like the angling math, also changes in the places where no one else is looking. I lobbed the fly into a high arc that caught on the road above and snagged. A gentle tug sprung the fly down into the eddy, where it vanished into another wrinkle as soon as it touched the water. The line went taut and bulldogged down, but cranking the reel or ratcheting down the drag wasn't necessary. Working the line with the pressure of my index finger, I guided a 10-inch brown to the tailout at the back of the pool.

For wilder trout, I had resorted ironically to paradox. The pasture culvert is a singular habitat, wholly manufactured and incidental, with no mind toward the trout. How did the culvert pool come to harbor trout? Was it the spawning tragedy conscientious anglers are seeking to rectify? Was it the farmer's son who stocked the pool himself, racing up from larger water with a gasping trout in hand so he could easily catch it again later?

The culvert is a cipher, a placeholder that stands in for all human intervention that manages a million trout in 1,000 miles of stream intentionally and responsibly.

For wilder trout, now, I choose to leave some trout alone.

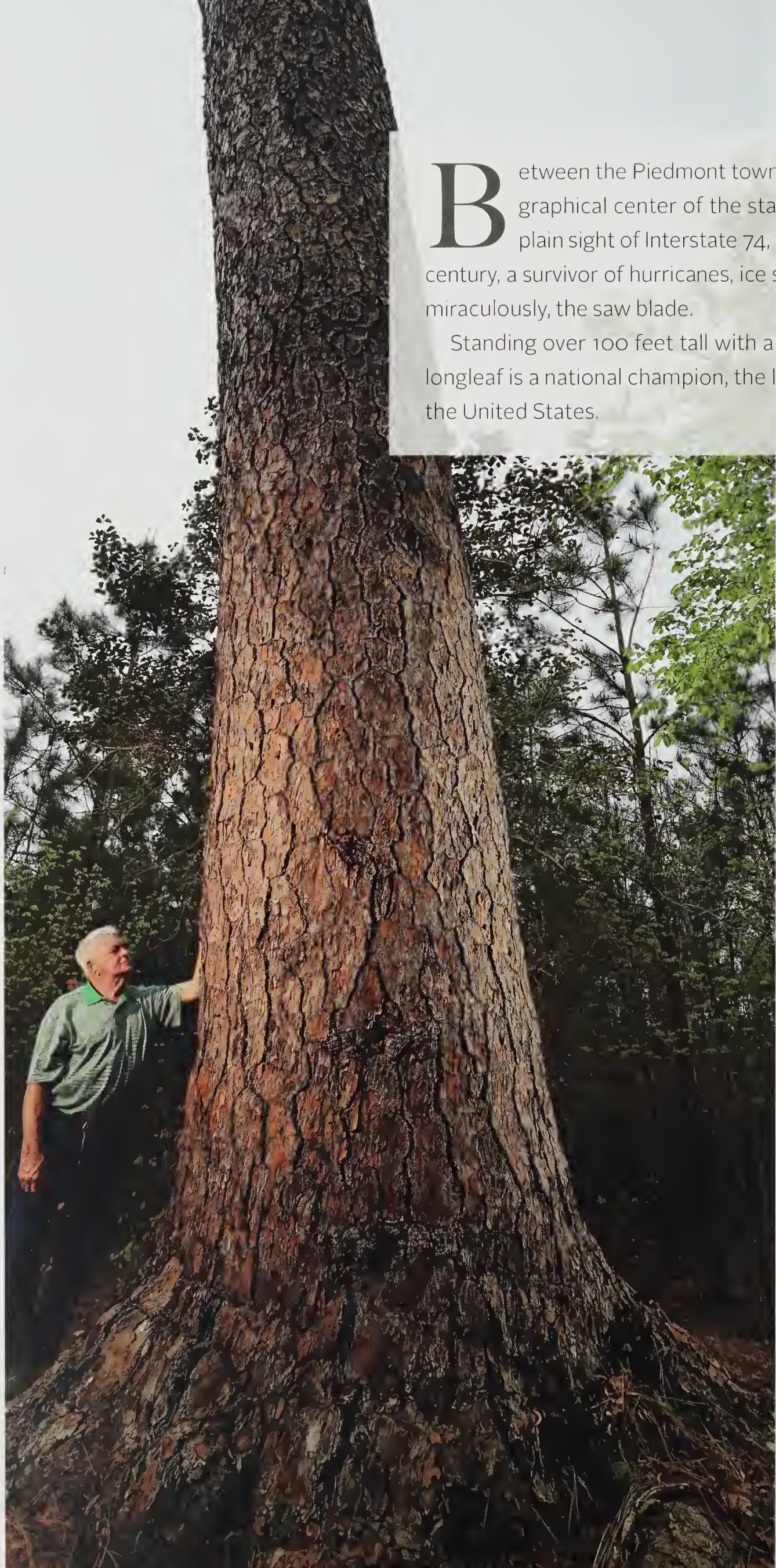
Neil Norman is an English professor and maintains a blog, Soft Hackles, Tight Lines (softhacklepatternbook.blogspot.com).

THE LAST

GIANTS

Searching for champion trees in North Carolina

written and photographed by Todd Pusser



Between the Piedmont towns of Candor and Seagrove, near the geographical center of the state, is an enormous longleaf pine tree. In plain sight of Interstate 74, the tree stands as it has for century upon century, a survivor of hurricanes, ice storms, lightning strikes—and even more miraculously, the saw blade.

Standing over 100 feet tall with a circumference greater than 12 feet, the longleaf is a national champion, the largest of its kind measured anywhere in the United States.

With permission from the landowners, I recently visited the massive pine with my father last summer (left). Standing on the shoulder of the interstate as cars whizzed by, I could easily see the flattop crown, so characteristic of an old longleaf pine, towering above all the surrounding oaks and planted loblolly pines.

Though I could tell right away it was a large pine, it was not until I walked up to its base that I could truly gauge the immensity of the tree. It was unlike any other longleaf pine tree I have ever seen. Three full grown adults, with arms outstretched, could not reach around its base. A large limb from the pine's crown, likely broken off during a storm, was lying on the ground next to the trunk. My father and I, straining as hard as our backs would allow, could not budge it. The longleaf pine tree was, in a word, awesome.

Though I see trees all the time, rarely, if ever, do I encounter anything remotely this large. With silent reverence, we stood and stared up at the massive trunk toward the Carolina blue sky. For some unknown reason, I felt an overwhelming urge to reach out and touch it. Running my hands over the furrowed crevices of its thick bark, I thought of the vast swaths of longleaf pine forest that once covered much of the Coastal Plain of North Carolina and the Southeast. Well over 90 percent of that forest is now gone, consumed by generations of man for lumber and turpentine.

Here, standing before us, was a shining example of that once plentiful forest. Longleaf pine trees can live more than 500 years and this incredible specimen was likely well over a century old when the United States declared its independence from Great Britain in 1776.

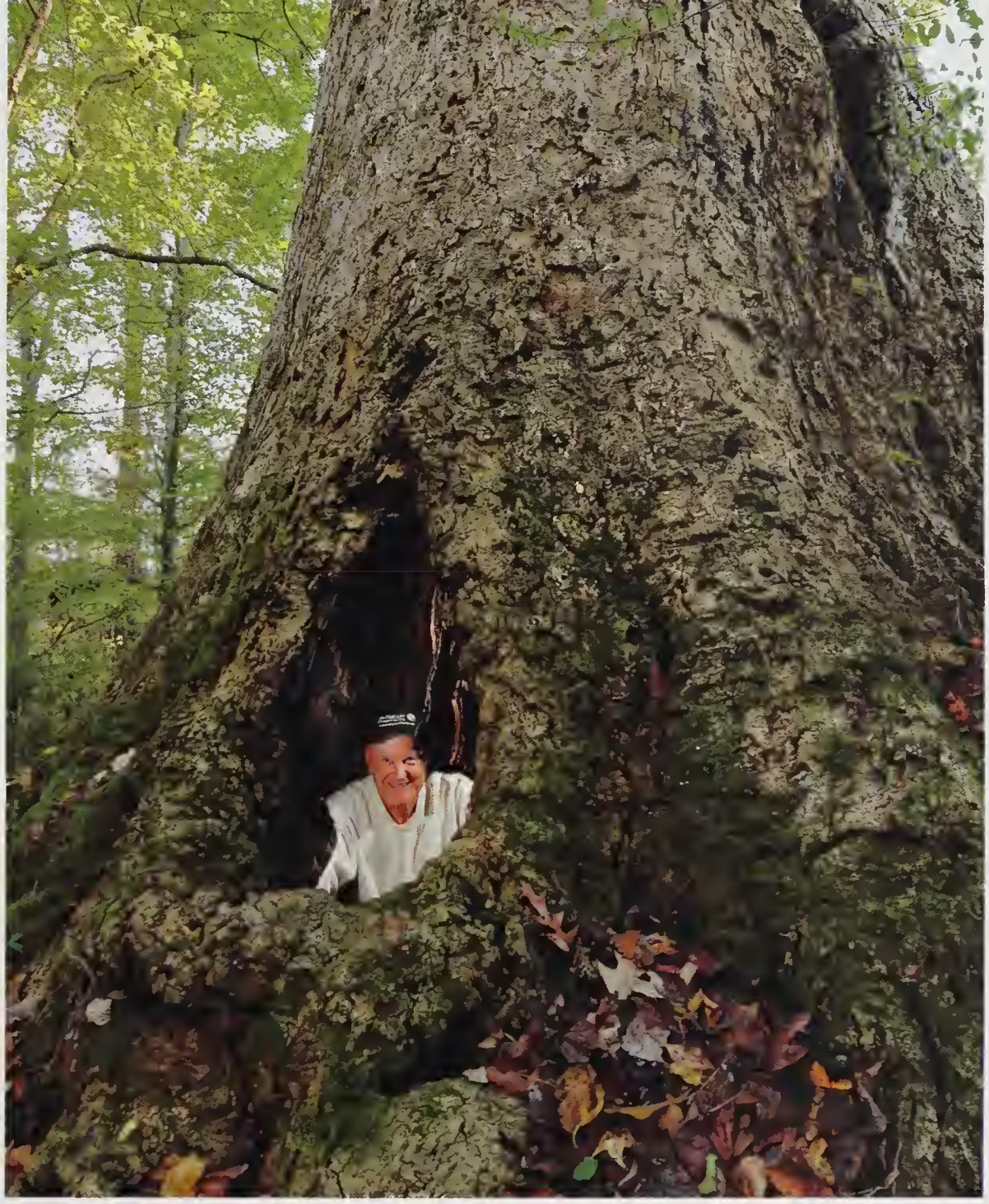
The Big Book of Big Trees

When one thinks of giant trees, perhaps the first ones that come to mind are the enormous redwoods and sequoias of California. Standing over 350 feet tall with diameters large enough to drive a Ford F-150 through, these goliaths of the plant kingdom are the largest trees on earth and have inspired generations with their beauty and spectacular size. Countless words in the form of books, poems, magazine articles and newspaper stories have been written about their magnificence. National parks have been formed specifically to protect them. The largest examples are given names befitting their impressive stature. One giant sequoia appropriately named "The President" sports massive tree limbs that hold nearly 2 billion leaves.

North America has close to 750 species of native trees, ranging in size from the giant redwoods and sequoias of California to more dainty species, like southern crab apple, whose overall stature resembles a shrub rather than a tree. In 1940, the American Forest Association, a nonprofit organization based in Washington D.C., formed the National Big Tree Program in an effort to locate, register and protect the largest species of native trees across the United States. The program is active in all 50 states and publishes its list of champions in an annual publication called The National Register of Big Trees.

Each state maintains a list of the largest trees found within its individual borders, crowning them state champions. If state champion trees are large enough, they may qualify for the big leagues and make the Register as a national champion. For 75 years, the goal of the program has remained the same: to preserve and promote the iconic stature of these living monarchs and to educate people about the key role these remarkable trees play in sustaining a healthy environment.

North Carolina joined the Big Tree Program early in the 1970s and has since played host to dozens of national champion trees. According to Alan Moore of the N.C. Forest Service, and current big tree coordinator for the state, North Carolina currently has 31 National Champion trees listed on the Register.



Previous page: Named for forest ranger Bob Padgett, the massive trunk of the state champ tulip poplar reaches toward the sky in a mountain cove near Highlands. Gary Williamson (top) and Byron Carmean (bottom) have spent 30 years looking for champion trees throughout the south.

In order for a tree to make the Register, it must first be nominated by someone. The nominator, using an algebraic formula developed by the Forest Association, measures the tree's circumference in inches, adds the tree's height in feet and then adds one-fourth of the average crown spread. The total combined points from the three measurements determine whether the tree is a champion or not.

Keeping An Eye Toward The Sky

It's likely that no one has nominated more state and national champion trees than Byron Carmean and Gary Williamson of southeastern Virginia. Working together as a team, Carmean, a retired science teacher, and Williamson, a retired Virginia park ranger, have combed the backwoods, river bottoms and swamps of Virginia and North Carolina since the early 1980s in their quest for champion trees. Most Saturdays will find them paddling a canoe quietly down a Coastal Plain river or driving remote back roads searching for the next big tree.

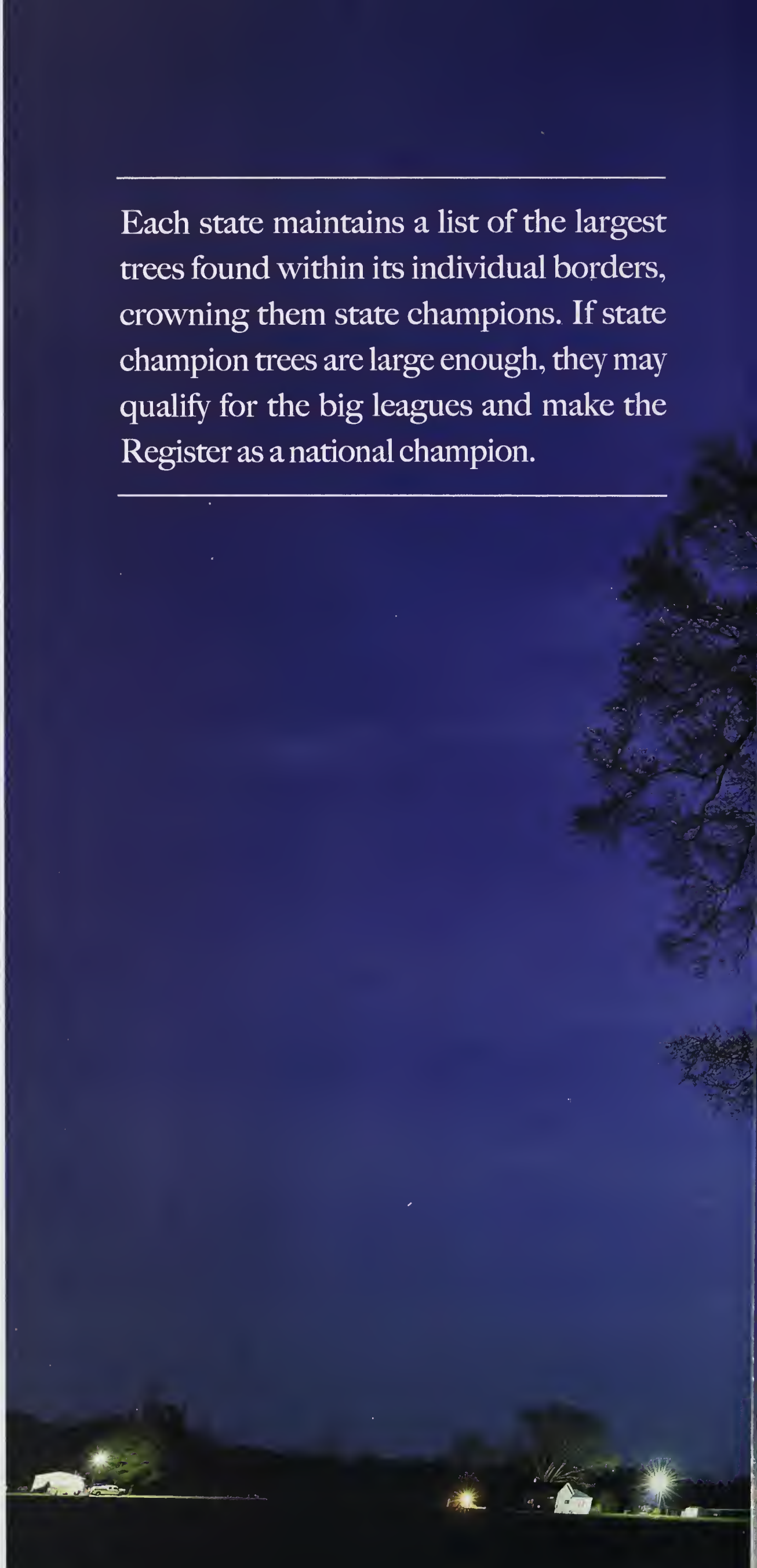
For years, they concentrated their search in their home state of Virginia, nominating nearly half of that state's champion trees. For the last decade or so, they have spread their search into the wilds of North Carolina. Between the two states, Carmean and Williamson have found over 45 national champion trees — an astonishing figure.

I recently joined them as they set out to measure a massive bald cypress they found along the Tar River in Edgecombe County. The tree, if their hunch is correct, might be the largest living thing found east of the Continental Divide.

It takes a trained eye to spot a champion tree, a skill both Carmean and Williamson have in spades. Carmean once spotted the national champion poison sumac while driving down a rural South Carolina road at 60 mph. The two big-tree hunters also have an intimate knowledge of the more than 200 tree species, native and naturalized, that occur in North Carolina.

A native tree is one whose species is native to the United States, while a naturalized tree is one whose species was introduced into the United States from another country but is now growing in a natural or wild state. In the woods, the two men are

Each state maintains a list of the largest trees found within its individual borders, crowning them state champions. If state champion trees are large enough, they may qualify for the big leagues and make the Register as a national champion.



A full moon shines through the branches of the national champ Darlington oak in Edgecombe County.

NATURE'S WAYS

How Can Trees Get So Large?

See Nature's Ways, page 43.

like walking field guides, pointing out the variety of trees growing next to trails and rattling off the Latin names of plants growing beneath their canopy.

One might think that champion trees can only be found in thick swamps or in remote mountain valleys. However, according to Carmean and Williamson, many champion trees are found right in suburban front yards or on busy town streets where hundreds of people see them every day, most of whom don't even realize they are looking at a champion tree.

One such tree, the state champion water oak, sits on a corner of a well-traveled street near downtown Elizabeth City—its massive limbs draping over a two-lane suburban road. The national champ Fraser fir, our tallest Christmas tree, stands by the 18th green of a golf course in plain sight of the front porch of the High Hampton Inn in the mountains of Jackson County.

Big-tree aficionados regularly hunt old estates and farms that have been in families for generations. Old cemeteries are also favorite spots to look for big trees. The current state champ, and former national champion, flowering dogwood is found in an old cemetery next to a small country church in the town of Clinton near Interstate 95.

State champion trees are often found in suburban environments, such as the water oak (above) from Elizabeth City and the flowering dogwood (below) in a cemetery near Clinton. The bloom of the national champion silky camellia (below right) can be seen in Merchants Millpond State Park. Byron Carmean and Gary Williamson measure the circumference of the large bald cypress (right).

Not all champion trees are obviously trees. Some may appear as nothing more than a large bush or shrub. To avoid confusion, the American Forestry Association adopted the definition of a tree as: "A woody plant having one erect perennial stem or trunk at least 9 ½ inches in circumference at a point 4 ½ feet above the ground, a definitely formed crown of foliage, and a height of at least 12 feet."

One such shrubby-looking tree is the silky camellia, whose large, white flowers make for a spectacular show when it blooms in May. Working on a tip from a park ranger, Carmean and Williamson recently found the national champion silky camellia deep within the forest of Merchants Millpond State Park.

'A Wow Tree'

It was a cold, dreary day when I traveled with the big-tree hunters to view the massive bald cypress growing along the shore of the Tar River. Ominous clouds overhead threatened rain as we drove a winding dirt road through a hardwood forest near the edge of the river.

Carmean and Williamson first found the tree while paddling the Tar in late August, its crown easily seen towering above the surrounding tree line. At the time, the forest was dry and the duo could easily walk around the base of the tree. Not so this day.

Heavy rain throughout much of October had caused the slough in which the cypress stood to fill with water. Now 4 feet of water surrounded portions of its immense base. It was difficult to maintain footing on the slippery, muddy bank as I photographed Carmean and Williamson measuring the circumference of the tree, which was just shy of 30 feet. Combined with the tree's height of 134 feet and one-quarter inch and the crown spread of 61 feet, the tree scored a total of 507 points. Or as Williamson put it: "A wow tree," one that when you see it in the forest, you just have to stop walking and say "wow."

Despite the tree's impressive point total, it amazingly did not score as high as the current state champion bald cypress in Martin County, which has a total of 558 points. Carmean refers to that tree as a "turnip tree," because its base, at 39 feet in circumference, is considerably more massive than the rest of its trunk.

One thing that the champion tree formula fails to take into account is the total volume of wood the tree contains, a quirk, that some say, gives "fat trees" an unfair advantage. If the total volume of the tree was measured, then the Tar River bald cypress is a much larger tree than the current state champion because it maintains its massive girth nearly all the way up its trunk.

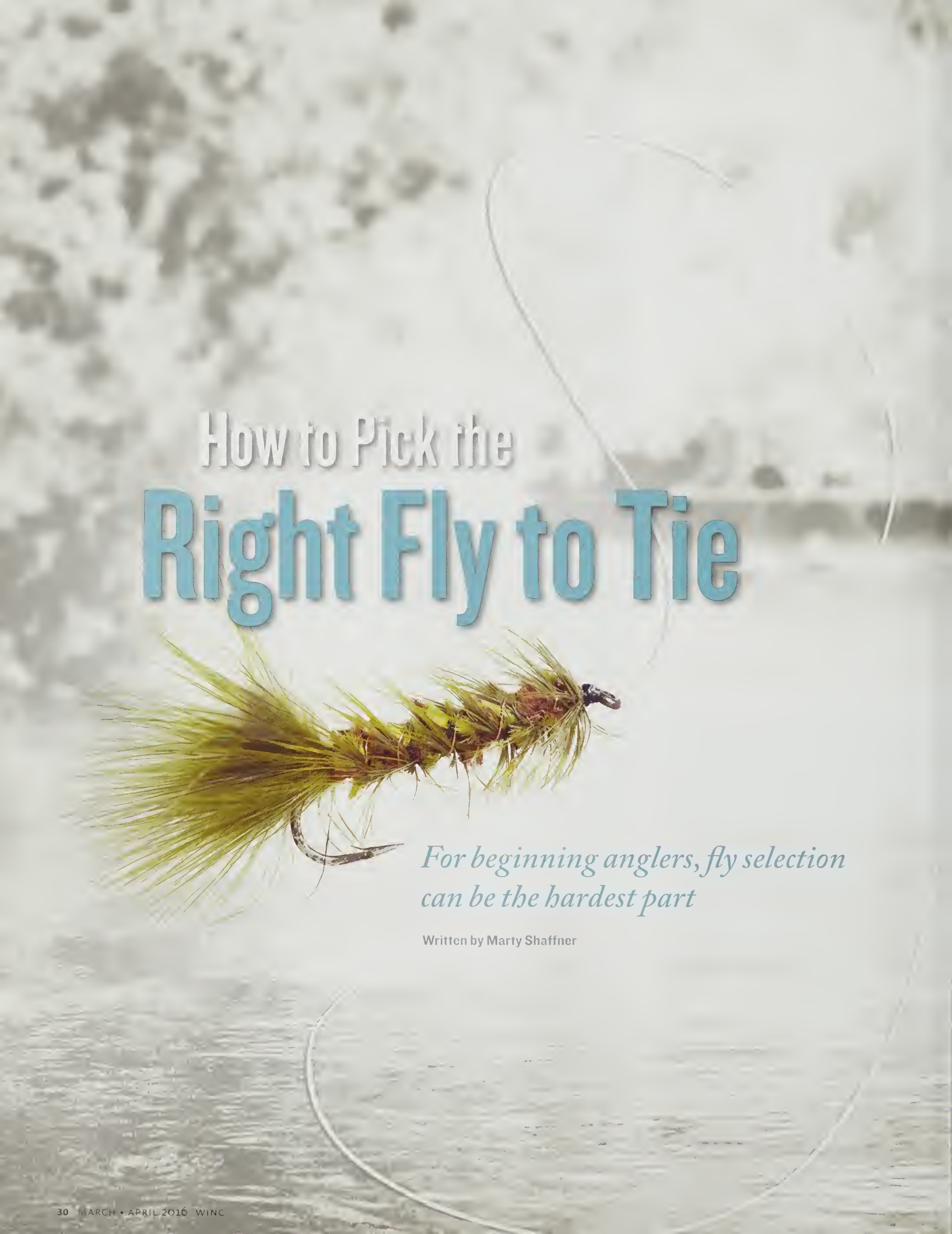
Rain started to fall as I finished photographing the tree hunters standing next to the immense trunk. The men commented that the bald cypress was the largest tree either had encountered in over 30 years of looking for champions. Gargantuan cypress trees, like the one standing before us, are ancient. Annual growth rings counted from core samples taken from bald cypress growing along the Black River in the southeastern corner of the state have shown the trees to reach over 1,700 years of age, making them among the oldest organisms recorded on the planet. A cypress this size could be over 2,000 years old.

Gathering our remaining gear, Carmean and Williamson were already discussing their next trip, a paddle down the lower stretches of the nearby Meherrin River. Their hunt for the next champion tree goes ever on.

Before leaving, we turned one more time to pay our respects to the great monarch of the forest. To gaze up at an old-growth bald cypress, its towering trunk of gray-brown bark and reddish needles contrasting with the pale sky, is to see one of the great wonders of the world. ◆

Todd Pusser is a marine biologist and a frequent contributor of stories and photographs to Wildlife in North Carolina.

How to Pick the Right Fly to Tie



For beginning anglers, fly selection can be the hardest part

Written by Marty Shaffner

ANNETTE SHAFF

I get asked a lot of questions when guiding anglers whose experience levels range from beginner to intermediate. I can usually respond with ease to inquiries about leaders and tippet, casting and gear, and even the age-old question of what weight and length fly rod to buy.

But there is one question I always find challenging to answer in a manner that beginners can understand: "How do you know which fly to tie on?"

This question has no easy answer. Heck, some people who have been fly-fishing casually for years don't know how to pick the right fly on a given day. So, here's how I choose a fly every time I'm on the stream.

Bites Vary

Fish bite on instincts. Some are triggered by certain actions, movements, shapes and colors. Others are as subtle as a glint of flash. These vary from day to day, and sometimes change several times during any given day, so just because you have the bite figured out now does not mean you will have it tomorrow—or even after lunch.

I know an avid saltwater fly-fisherman who fishes almost exclusively with Clouser minnows or variations of this fly in different color schemes. He simply varies his retrieve to mimic different prey species. When fish are feeding on baitfish, he casts out and strips the fly back fast and steady, keeping it up in the water column. When fish are feeding on shrimp (like speckled trout

JERRY SCHOEN

JERRY SCHOEN

Mayflies are aquatic insects belonging to the order *Ephemeroptera*. The adult mayfly is often imitated with patterns such as the Adams, Light Cahill and Royal Wulff. To imitate its nymph stage, anglers can use the Pheasant Tail, Prince Nymph and Hare's Ear. The adult mayfly has a very short lifespan, usually less than a day depending on the species.

and red drum often do), he retrieves the fly in a sequence of three short, fast strips with a short pause, then three more short strips to imitate a panicked shrimp. He also occasionally lets the fly sink to the bottom, working it to look like a small crab.

This fisherman's motto: To catch fish, a fly doesn't necessarily have to look like the prey, but it does have to act like the prey.

Before recommending which fly to fish at what time, there are first a few questions to consider and a few factors to evaluate.

What Are Available Food Sources?

North Carolina doesn't have hatches like those on fertile tailwater or limestone streams, but some aquatic insects are almost always hatching in various degrees of intensity. So, nymphs or larvae are active below the surface and trout feed on them. In other words, trout have become accustomed to seeing and eating whatever insects are available at any given time.

The trick is knowing what insects are hatching when.

To keep it simple for beginning anglers, I refer to colors instead of specific insects. In North Carolina streams, insects start dark and get lighter as the season goes on. From late fall through winter, colors run black and olive, then brown and gray, then yellow and cream. Little black stoneflies are among the most abundant species during this time, and as the name indicates, they are black and small. Adult stoneflies aren't a major food source for trout, but the fish do feed heavily on nymphs.

Any Black nymph in size 18 or 20 will usually work well and is my staple winter fly into March. Blue-winged Olive mayflies are another wintertime player as well. Although adults are olive-green bodied with dark dun wings, nymphs can be brown or gray. And both nymphs and adults are small, with most being from a size 18 to 24.

As winter breaks into spring, insects start to lighten to browns, grays and slate blue. Quill Gordons, March Browns, Hendricksons and Blue Quill mayflies begin to hatch. In early May, aquatic insect hatches turn to yellow, and Little Yellow stoneflies and Sulfur mayflies become favorite feeding options for trout. (Sulfur mayflies must be the filet mignon of aquatic insects because trout are especially fond of them and, in my experience, will feed on them above all other available insects.) Next come sporadic hatches of Light Cahill's on some streams which are a very light cream and sometimes almost a dirty white.

After this, our color chart isn't as much use. Terrestrials become an important source of food for trout because of their increasing abundance and diminishing aquatic insect hatches. Trout really key in on Japanese beetles, inch worms, crickets, grasshoppers, ants and various other land-based insects that find their way into streams during summer months.

Matching the sporadic hatches on our North Carolina streams will usually bring success to fly-fishermen with decent skills.

Filling a Beginner's Fly Box

This selection of flies should enable a beginning fly-fisher to catch fish under most conditions without spending a fortune. Add others to your arsenal over time.

NYMPHS

Pheasant Tail #16–20

Prince Nymph #12–16

Hare's Ear #14–18

Little Black or Yellow Stonefly Nymph #18

Tellico Nymph #18

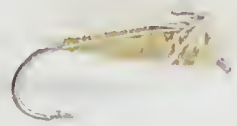
Zebra Midge #20 Black

San Juan Worm #12 or 14

DRY FLIES

Adams #12–18

Blue Wing Olive #20



Sulfur or PMD Parachute #16

Yellow Stimulator #16

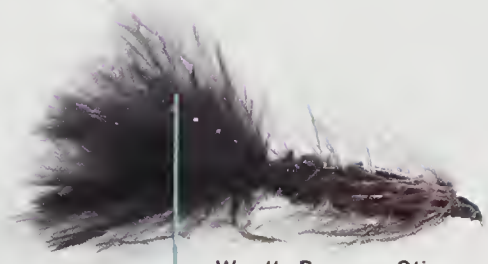
Light Cahill #14–16

Elk Hair Caddis Tan #12–18

Royal Wulff #12–16

Foam Beetle #12
(Get the ones with the orange on the back so you can see it.)

STREAMERS



Woolly Buggers Olive or Black #8 and #12 (The 12s can double as a nymph in murky water)

MELISSA McGAW/NCWRC

RALPH HENSLEY

Remember, fishing is a thinking person's sport, so every time you have success, make a mental note about the details: How did you do it? What did you use?

Flies Everywhere

There are times when realistic imitations are not the ticket for catching trout, instead attractor flies are the order of the day. These flies do not imitate any specific insect but are either generic buggy-shaped flies mistaken by trout for any number of types of food, or are very gaudy and flashy flies that trigger trout to bite by color. Some of the most popular flies fall under this category, including the Woolly Bugger, Prince nymph and Royal Wulff.

Other more recent fly patterns like the Copper John, Rainbow Warrior, Brassie, and Lighting bug have found their way into anglers fly boxes; the Copper John has quickly become one of the best-selling nymphs available. Variations of the old stand-by Prince nymph, from purple bodied to CDC hackle to one called "The Fly Formerly Known as Prince," have become popular.

Another must-have is the San Juan worm, which was born on the San Juan River in New Mexico as an imitation of a local red aquatic worm but has become a favorite all over the country. Why would a trout in a North Carolina freestone stream eat a red aquatic worm imitation when there has never been a bright red aquatic worm living there? Because the San Juan worm has a lot of movement and bright colors that catch a trout's attention.

Some flies just catch fish, such as the aforementioned Woolly Bugger, which originated to imitate a hellgrammite, which is the nymph form of the Dobsonfly. The original fly was tied with an olive body, black hackle and black marabou tail but is now tied in every color possible, from purple to white. Fish will strike a Woolly Bugger in almost any situation because of the movement of the hackle and marabou tail along with a silhouette that can be various things a trout could eat.

Attractor flies will often take trout when more natural imitations fail to produce. I've had success fishing a two-nymph rig with a larger attractor nymph trailed by a smaller more natural one, giving fish a choice of either.

Other Determining Factors

One of the biggest variables that can affect my choice of flies is stream conditions, which can trump my usual choice in fly selection. If a few blue-winged olive mayflies are buzzing around the stream, picking a size 22 Blue-winged Olive nymph would seem to be in order. Not so fast. Let's say there had been a torrential downpour the night before and the stream is swollen and very murky, borderline on being muddy. Trout will probably have a hard time seeing that selection, so try tying on a bigger, dark-colored nymph like a stonefly imitation, Prince nymph or even a black Woolly Bugger.

One side note is to never underestimate the color black in murky water. I have caught trout on size 18 Black nymphs in some pretty murky water. Another variable is low, clear water anglers often face in late summer and sometimes early fall. Those were the conditions last October and my guide trips experienced excellent dry fly fishing, even though normally deep nymph fishing is the ticket for that time of year.

Low, clear water also usually means downsizing flies. If 14 or 16 nymphs are usually used under a strike indicator, try a size 18 or 20 fished as a dropper under a dry fly or small yarn indicator. Fishing pressure is another variable to consider and almost always means downsizing flies along with smaller tippets. When fishing heavily pressured waters, I always go small and pull out the midge pupa imitations pretty quickly if small nymphs aren't producing. Every fly-fisherman should carry a few Zebra midge patterns in different colors for fishing pressured waters if they don't have any other midge imitations. Even on some delayed-harvest streams, I've had success with midge pupae, especially in larger, slower-moving holes where fish have been hammered by anglers.

Sometimes, even fishing the same fly pattern in a smaller size can be like magic. Many times, I have fished streams that were crowded with anglers and had great success with size 20 nymphs in the same standard patterns most of the fishermen were using.

Remember, fishing is a thinking person's sport, so every time you have success, make a mental note about the details: How did you do it? What did you use? Then when you are presented with like conditions you can start with flies that caught fish the last time. This doesn't always work, but it's a good place to start.

This brings me to my last piece of advice. If the fly isn't catching fish, change it. Everybody has their favorite fly that they have used to catch a lot of fish, but if it isn't working after giving it a fair chance, try something else. Remember, sometimes what a trout will take is off the wall. That's what keeps it interesting and why it's called fishing and not catching. But hopefully my advice and some on-stream experience will help beginners catch more trout. Because fishing is fun, but catching is more fun.

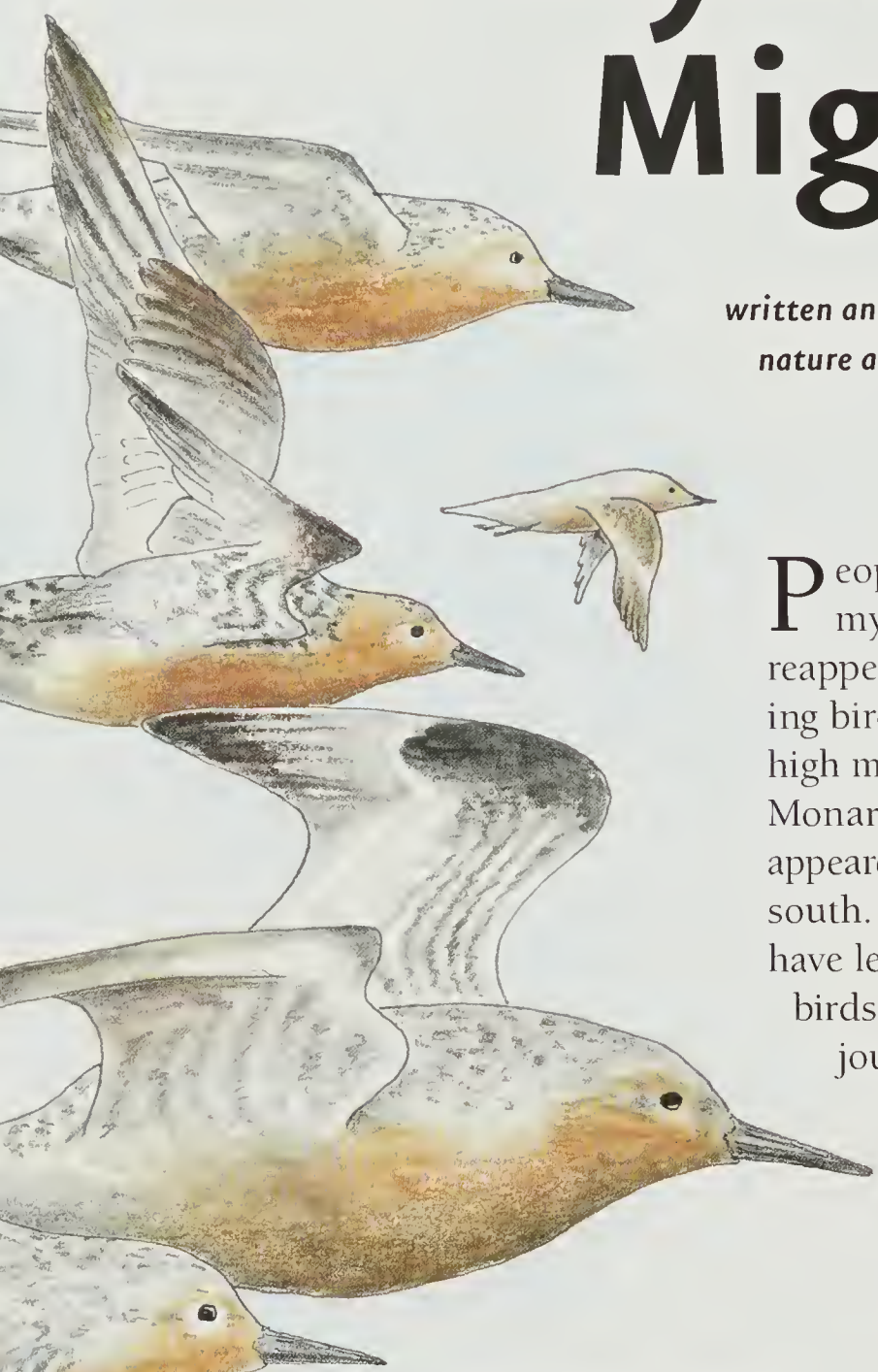
Marty Shaffner is a longtime contributor to Wildlife in North Carolina *and a fishing guide in northwestern North Carolina.*

Scientists know a lot, but still haven't solved all . . .

Mysteries of Migration

written and illustrated by Helen Correll
nature activity by Anne M. Runyon

People have long noticed that some birds mysteriously disappear in the fall only to reappear in the spring. Some believed that the missing birds were hibernating in holes in the ground, on high mountains, or under the muddy bottoms of ponds. Monarch butterflies also mystified people when they appeared in huge groups, or flutters, in the fall, heading south. But scientists who study birds and butterflies have learned much by attaching radio transmitters to birds, banding birds and butterflies, and following journeys on radar. Today we know much more about these long journeys called migration.

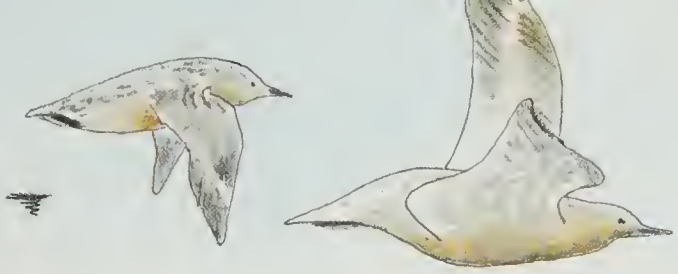


MIGRATION MADNESS

Migration is undertaken twice a year by 75 percent of the more than 650 bird species that live in North America. Migrations are loosely divided into three kinds: long distance, across the ocean to another continent; medium distance, across state lines; or short hops, such as up and down a mountain. The journey will depend on the species of bird or butterfly. Some fly in flocks, others are solitary. Some fly at night to avoid predators, some during the day.

Both birds and butterflies ride prevailing winds, catch rising thermals, and all have remarkable navigation skills to help them find their way. All face many dangers during the passage, including storms, predators, exhaustion and dehydration. Whole flocks of birds have been known to collide with other birds or with man-made objects like cell towers and tall buildings. Monarchs face the added threat of being hit by cars.

In spite of the hazards, migration has more advantages than staying put. By traveling to a different place to breed, birds will have more room for nesting, fewer predators while raising their nestlings and longer daylight hours to forage for food. Butterflies will find more milkweed on which to lay eggs. By fall, chicks are grown, weather chills, milkweed shrivels and food supplies shrink. So off they go again, flying south.



BIRD BRAINS

Many birds travel exact routes and return to the same neighborhood, or even the same house where they spent the previous summer. Scientists believe migratory birds' brains hold a sort of internal compass that allows the bird to fly in the correct direction. This is called orientation. They also use navigation, or a kind of inner map, to identify certain locations and landmarks, such as mountains, rivers and islands. Night fliers are thought to navigate by stars and by sensing changes in the earth's magnetic field.

BUTTERFLY BEHAVIOR

For most butterflies, at least one stage (egg, caterpillar, pupa or adult) can live through winter. But no stage of a monarch can survive severe cold temperatures, so they must fly south. Monarchs spend our winters in central Mexico or Southern California every year. In the spring they head back north and breed along the way, each generation living only four to six weeks until the fourth generation, which is the one that will migrate south in fall. During their migration, monarchs use specialized hairs, or setae, found on the head, legs and feet to sense wind, gravity and position of their wings.

PREPARING FOR FLIGHT

Birds and butterflies that make a fall migration do so in response to shortened days and reduced amount of sunlight in autumn. The passage will be difficult at best, so preparation is very important. This means storing fat under the skin and in various organs and cavities within the body. Fat is converted to energy during the flight.

Birds preparing to migrate go into a feeding frenzy in order to gain weight. Fat also produces metabolic water, which is important because dehydration is as serious a danger as starvation to migrating birds.

In the fall, monarch butterflies also respond to shorter days and less sunlight. With these cues, monarchs go into a phase called diapause, which is a period of resting to store up fat as energy for their journey back to Mexico or California, which can be up to 3,100 miles.

OH, WHAT A FLIGHT

Beginning around October, birds and butterflies start flying south. While most birds make frequent layovers, some long-distance fliers do amazing things. Ruby-throated hummingbirds fly non-stop for 500 miles across the Gulf of Mexico to spend winter in Central America, sipping from tropical flowers. One of the farthest flying birds, the red knot, will leave its Arctic breeding grounds and fly over 9,300 miles to the southernmost tip of South America to its winter home. This shorebird can fly as many as 1,850 miles without stopping.

MYSTERIES REMAIN

How does a tiny hummingbird fly from Raleigh to South America, only to return in spring to the exact same backyard feeder? How does a monarch brain the size of the tip of a ballpoint pen hold the kind of information needed to fly from North Carolina to its winter roost on oyamel fir trees in central Mexico, a place this butterfly has never seen? Many mysteries about migration remain for the next generation of human scientists to solve. Maybe you can help!

Get Outside

Now through May is a great time to see birds making their spring migration. Look carefully in your neighborhood and local parks and make a bird list with date and description. Use the description to help you identify the birds in a field guide or online. Read whether they are resident birds or migratory birds. If a migrant, see where the bird's winter home is and calculate how far they flew to get to your neighborhood.

Read and Find Out

- "On the Wing: American Birds in Migration," by Carole Lerner, Harper Collins, 2001
- "An Extraordinary Life: The Story of a Monarch Butterfly," by Laurence Pringle, Scholastic, 2001

Find out more about Project WILD Workshops and literature at the Wildlife Commission's website at ncwildlife.org.

Ruby-throated Hummingbird Paper Sculpture

1) Carefully cut out both parts of your design.

2) Fold down along the four · · · lines, making mountain folds.

3) Fold up along the three - - - lines, making valley folds.

4) Fold wing A across back of bird, and tuck A slot into B slot.

5) Align lower edge B with line on back and glue.

6) Glue tab B to underside of wing A, to secure body.

7) Gently curl chin B over chin A, matching edge to line and glue.

8) Glue thin beak A in center of thicker beak B. Trim away extra beak B.

9) Gently curl forehead B over forehead A, matching edge to line, and glue.

10) Glue back and tail onto body.

11) Fold wings up and curl as desired.

Habitat Enhancement for Mattamuskeet

In partnership with the U.S. Fish and Wildlife Service, the North Carolina Wildlife Resources Commission has collaborated with researchers from UNC-Chapel Hill to implement a habitat enhancement project on Lake Mattamuskeet beginning this year. The Wildlife Commission will fund the $233,000 project through a Wildlife Restoration Fund grant.

The three-year research project will focus on maintaining submerged aquatic vegetation in the east basin of the lake and examining the potential to increase coverage of aquatic vegetation in the west basin. Healthy stands of submerged aquatic vegetation provide food for waterfowl, and habitat for other migratory birds, fish and crabs. Submerged aquatic vegetation is limited in the west basin of Lake Mattamuskeet, and in recent years has steadily declined in the east basin.

As the centerpiece of the Mattamuskeet National Wildlife Refuge in Hyde County, Lake Mattamuskeet is home to an abundant diversity of wildlife — from the hundreds of thousands of waterfowl that winter on the lake each year to a unique fishery that consists of freshwater and estuarine species because of the drainage canals that connect the lake to Pamlico Sound.

The habitat enhancement project is one of several outlined in a Memorandum of Collaboration signed in 2014 by the Commission and the U.S. Fish and Wildlife Service to improve the lake's aquatic and surrounding habitat, improve water quality and provide better access to the lake. Other projects include conducting waterfowl surveys and fisheries research and surveys, managing aquatic plants, and improving and creating access areas.

The Commission has been conducting significant fisheries and fishing access-related work at Mattamuskeet over the last few years. So far, staff has:

- Provided management recommendations to enhance fisheries habitats in the main lake to improve the quantity and quality of sportfish populations.
- Conducted annual electrofishing and trap netting surveys in the main lake and surrounding canals to describe abundance, size, condition and growth of largemouth bass, black crappie and other sportfish.
- Collected and tagged adult largemouth bass with passive integrated transponder (PIT) tags to evaluate fish movement within and between lake and canal habitats.
- Stocked the lake with 45,000 largemouth bass fingerlings in 2014 and 70,000 in 2015 as part of a multi-year largemouth bass enhancement study.
- Surveyed anglers multiple times each week at 15 access areas from March 1 to Oct. 31, 2014, and summarized angler effort, catch and harvest of various species of fish and blue crab. Anglers and crabbers from more than 50 North Carolina counties as well as 17 different states were intercepted during the angler survey. Blue crab, channel catfish, black crappie, white perch and largemouth bass were the top five species targeted in the angler survey.
- Renovated two universally accessible boat ramps to increase access to the lake, one at Rose Bay Canal and another near the Lake Mattamuskeet Lodge.
- Provided joint funding with the U.S. Fish and Wildlife Service for the operation of the two USGS gauging stations on the lake that monitor lake level fluctuations and other water quality parameters in real time.

Other fisheries management plans for 2016 include an additional stocking of 50,000 largemouth bass fingerlings as well as the implementation of a largemouth bass movement project utilizing radio telemetry to track individual adult fish as they move in and out of the canals. Information gleaned from this study will help biologists understand better how fish use main lake and canal habitats at specific water levels.

MELISSA McGAW/NCWRC

e NEWSLETTER
Get N.C. Wildlife Update — news including season dates, bag limits, legislative updates and more — delivered to your Inbox from the N.C. Wildlife Resources Commission. Sign up at ncwildlife.org/enews.

Angler Breaks Blue Catfish State Record — Twice

If Zakk Royce's experiences are any indication, Lake Gaston holds some monster blue catfish.

The Murfreesboro angler caught not one but two state record blue catfish in a 24-hour period in December.

The first fish, caught on Dec. 20, weighed 91 pounds and measured 53 inches in length. On Dec. 21, Royce landed his second state record, a 105-pound blue measuring 55.75 inches in length. He caught both fish using cut white perch.

"This is a dream come true for me," said Royce in an Observer News Services interview. "I've been after a state record blue cat for 14 years. And now I've broken the record twice in consecutive days."

Royce runs Blues Brothers Catfish Guide Service and attends Cape Fear Community College, where he is studying marine technology.

Both fish were weighed on certified scales at Ace Hardware in Littleton and examined and identified by District 3 Assistant Fisheries Biologist Evan Cartabiano. Royce released both fish back into the lake after they were weighed.

The previous blue catfish state record was set in 2006 by Eric Fincher of Mount Pleasant, who caught an 89-pounder from Badin Lake on Nov. 25. He, too, released the fish after it was certified as the state record. The all-tackle world record listed by the International Game Fish Association is 143 pounds, caught on the Virginia side of Kerr Reservoir in 2011 by Richard N. Anderson.

To qualify for a N.C. Freshwater Fish State Record, anglers must have caught the fish by rod and reel or cane pole, have the fish weighed on a scale certified by the N.C. Department of Agriculture, witnessed by one observer, have the fish identified by a fisheries biologist from the Commission and submit an application with a full, side-view photo of the fish.

IN SEASON

In March and April, these seasons are open in North Carolina:

Hatchery Supported Mountain Trout: No fishing March 1–April 1. Season opens April 2–July 31.

Light Geese (Snow, Blue and Ross'): Through March 31 (by permit only). Electronic calls and unplugged guns permitted.

Roanoke River Striped Bass Management Area: March 1–April 30 (unless closed or extended by proclamation, 18-inch minimum, no fish between 22–27 inches in length.

Wild Turkey: Youth Week — April 2–8 Statewide Spring Season — April 9–May 7. Daily limit 1, possession limit 2.

There is no closed season or bag limit for groundhog, striped skunk, nutria and armadillo. There is an open season for taking beaver with firearms or bow and arrow during any other open season for the taking of wild animals.

Check the latest *North Carolina Inland Fishing, Hunting and Trapping Regulations Digest* for bag limits and applicable maps or visit ncwildlife.org.

Commission Wildlife Officer Honored

Master Officer Kenneth Ashe of the N.C. Wildlife Resources Commission was named a recipient of the 2015 Governor's Award for Excellence, the highest honor bestowed upon a state employee. He, along with 12 others, received the honor at an awards banquet at the N.C. Museum of History in Raleigh in November.

Ashe, who received the award for public service, was recognized for his work providing hunting opportunities to special-needs children and disabled veterans.

He began planning hunting trips for children with special needs in 2012, working with local hunters, landowners, county commissioners, the National Wild Turkey Federation, Emergency Medical Services personnel and volunteers to help with the hunts. He secured donations for special equipment, such as track chairs and a motorized mobility system for quadriplegics, to make the hunt more accessible and successful for participants. Two children harvested a wild turkey during the first hunt. Ashe then expanded his outreach efforts to include deer and turkey hunts for disabled veterans in 2013 and 2014.

"Kenneth Ashe has spent his entire adult life serving others, and has served on active duty with the U.S. Marine Corps and served in the North Carolina Army National Guard and the U.S. Army Reserves, including one deployment to Iraq in 2003," said Jon Evans, chief of the Commission's Law Enforcement Division. "He has been employed as a N.C. Wildlife Law Enforcement Officer for 18 years and deserves the recognition for his work to provide hunting and outdoor opportunities to disabled individuals who may not have these opportunities if it were not for Officer Ashe's efforts." Ashe is stationed in Macon County.

Presented annually, the Governor's Awards for Excellence are the highest honor a state employee may receive for dedicated service to the state and the citizens of North Carolina. They were created in 1982 to acknowledge and express appreciation to employees for their outstanding accomplishments beyond the scope of their normal duties.

CALENDAR OF EVENTS

Friday–Sunday, March 4–6

The 36th Annual Dixie Deer Classic will be held at the State Fairgrounds. This family-friendly exposition will include the N.C. State Turkey Calling Championship, a 3D archery tournament, educational seminars and much more. Visit dixiedeerclassic.org to learn more.

Friday–Sunday, March 18–20

Outdoor enthusiasts will enjoy three days of hunting and fishing exhibitors, wildlife art, decoys, boats, fly-fishing demos, camping, outfitters, sportfishing simulator, contests, archery demos, wildlife photography and fun for the entire family at the Cape Fear Wildlife Expo. Visit capefearwildlifeexpo.com to learn more.

Saturday, April 23

The North Carolina Bluebird Society's 2016 annual meeting will be held at The Summit Center at Haw River State Park. The public is welcome to attend and hear great speakers and enjoy lunch. Registration begins at 8:30 a.m. with a $14 fee, which covers the meeting and lunch. Additional meeting information is available at ncbluebird.org or by calling 336-764-0226.

Readers should check with the contact listed before traveling to an event. Items for listing should be conservation-oriented and should be submitted at least four months in advance to mike.zlotnicki@ncwildlife.org, or call 919-707-0175.

LIFETIME LICENSES

Help conserve wildlife for future generations. In 1981, hunters, anglers and wildlife enthusiasts became shareholders in an innovative investment and conservation program called the North Carolina Wildlife Endowment Fund.

Today, the commission has 19 different lifetime licenses in five categories: Infant, Youth, Adult, Senior and Disabled.

The endowment fund for wildlife was a simple yet revolutionary idea: Create a lifetime inland fishing or hunting license. Put the license fees into a special fund. Spend the accrued interest, not the principal, on programs and projects that benefit fish and wildlife. To learn more or to purchase a lifetime license visit ncwildlife.org/licensing or call 1-888-248-6834.

Art For Amphibians

PHOTOGRAPHS BY TODD PUSSER

The Disappearing Frogs Project (DFP), in partnership with the Amphibian Survival Alliance (ASA), is bringing environmental awareness events to the Triangle and Sandhills region beginning in February. DFP—a grassroots environmental art and science project—invites professional and emerging artists to create and submit artworks to support the mission of raising awareness of the global decline of frogs and other amphibians.

In its third annual art exhibition, the DFP expands its reach with five unique art venues spanning 90 days in six different N.C. counties.

Frogs are a visible and audible link to the well-being of our environment, and North Carolina's amphibian diversity is among the highest in the world. They also play a critical role in the health of the global ecosystem.

"This project gives artists an opportunity to support grassroots amphibian conservation, education and research by taking personal action to visually communicate this extinction threat," says founder and artist Terry Thirion of Charlotte. "Then we take it one step further and invite scientists to give public presentations about frogs, amphibians and environmental issues relevant to their research."

DFP has put out a call for artists who would like to participate in this important awareness effort. For more information, go to amphibians.org/disappearingfrogsproject/call-for-artists-2016.

Local and regional artwork will fill the exhibition spaces with distinctive pieces displayed from around the country and Canada. Mediums can include works on paper, photography, clay, jewelry and more. Brady Beck, NCWRC wildlife biologist and nature photographer, is one of many who has already donated his artwork to the exhibit. Beck's work includes a unique video capturing wildlife portraits and behaviors found in our North Carolina Longleaf pine forests. Live performances are also on the rise for 2016 as authors, poets and musicians perform at various locations.

The DFP has a full schedule of activities in the Research Triangle area and the Sandhills running through Earth Day on April 22. Science presentations, films and several children-specific events round out the roster. All events are free to the public.

For a complete schedule of activities and more information about the DFP go to amphibians.org/disappearingfrogsproject

March 7–May 1
Museum of Life and Science Art Exhibition, Durham, Terrace Gallery 2nd Floor.
Two and three dimensional works of art celebrating amphibians will be on display. Donations from regional and local artists will be on display in an array of mediums including a unique video capturing incredible footage of the amphibians living right here in our own backyard. Artwork is available for purchase. Science and amphibian related activities will be programmed in The Lab, adjacent to the exhibit.

Friday, March 18, 6–9 p.m.
Roundabout Art Collective, Raleigh. Join us for a Free Art Demonstration. Terry Thirion, Disappearing Frogs Project founder and artist, will lead you in this fun interactive painting event using a simple hickory stick and handcrafted walnut ink from a tree in her backyard.

March 25–April 9
Raven Rock State Park Art Exhibition. Artwork celebrating amphibians is displayed on a 25 foot wall inside the Visitors Center. Donations from regional and local area artists, including student artwork, will be on display. All mediums are accepted.

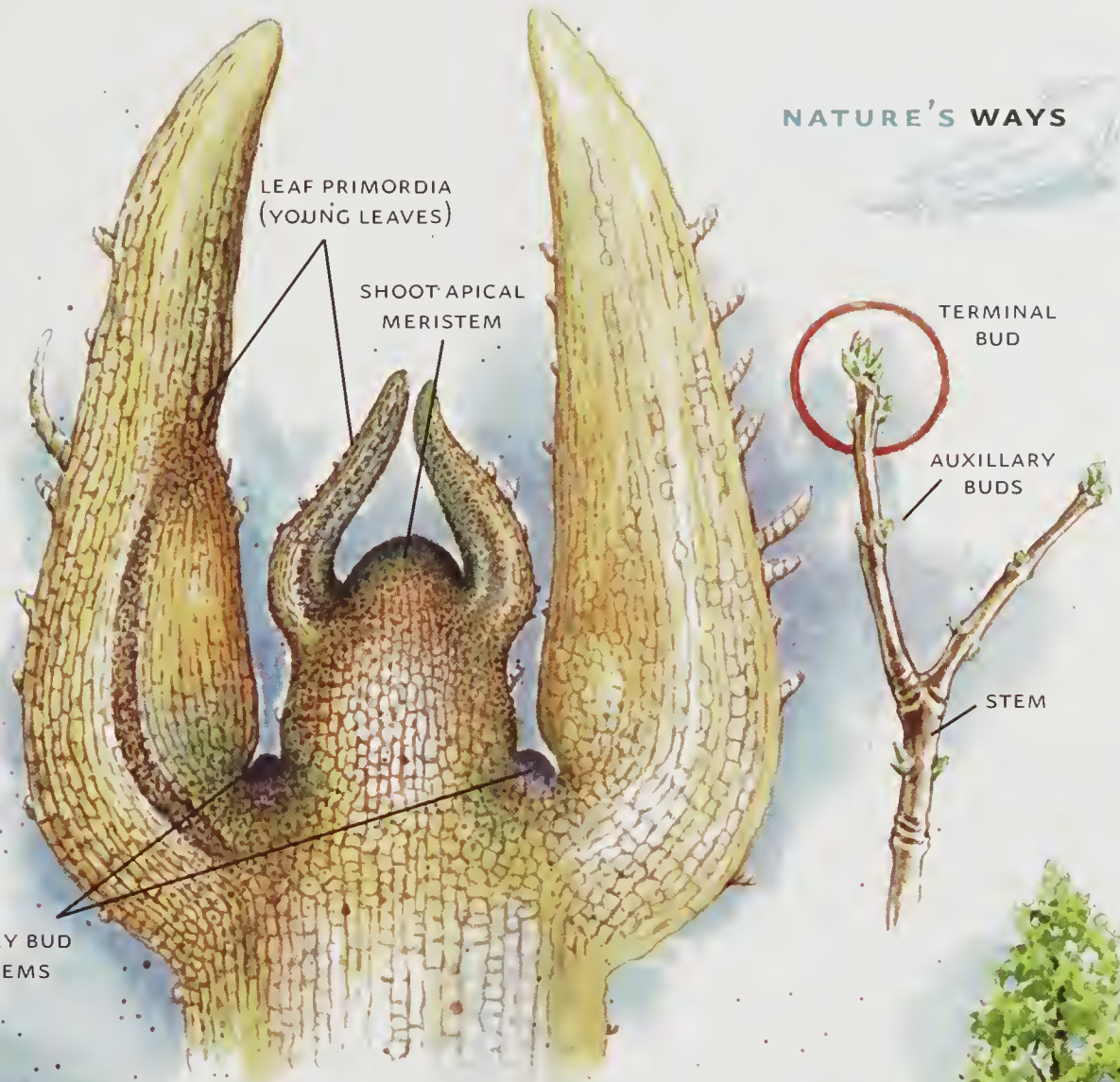
Disappearing FROGS PROJECT Art • Awareness • Action

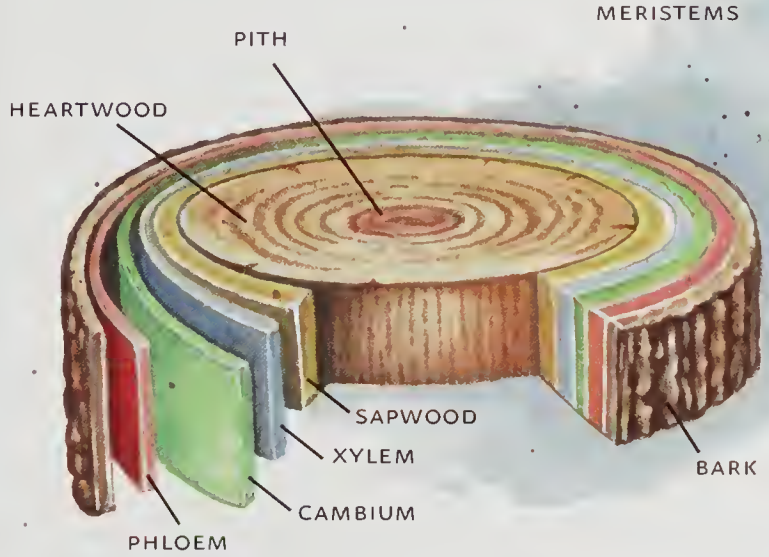
asa amphibian survival alliance

How Can Trees Get So Large?

written by Clyde Sorenson
illustrated by Jim Brown

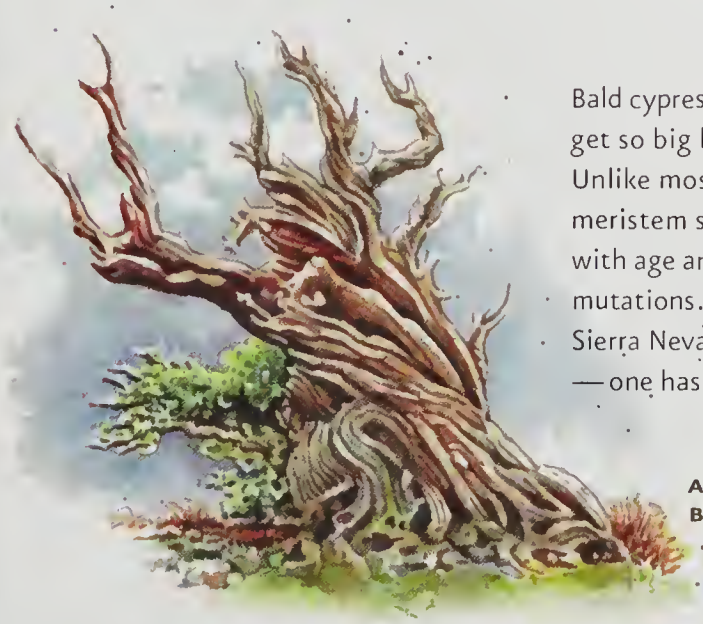
THE LARGEST LIVING THINGS Earth has ever known are trees like giant sequoias, coast redwoods and their relatives: the bald cypresses. The tallest living thing is a coast redwood nearly 400 feet tall; the most massive is a giant sequoia; and the "fattest" is a Montezuma cypress in Mexico. Each of these, and the immense bald cypresses found on North Carolina's coastal rivers, are huge for two reasons: some of their cells are immortal and the trees never stop growing.





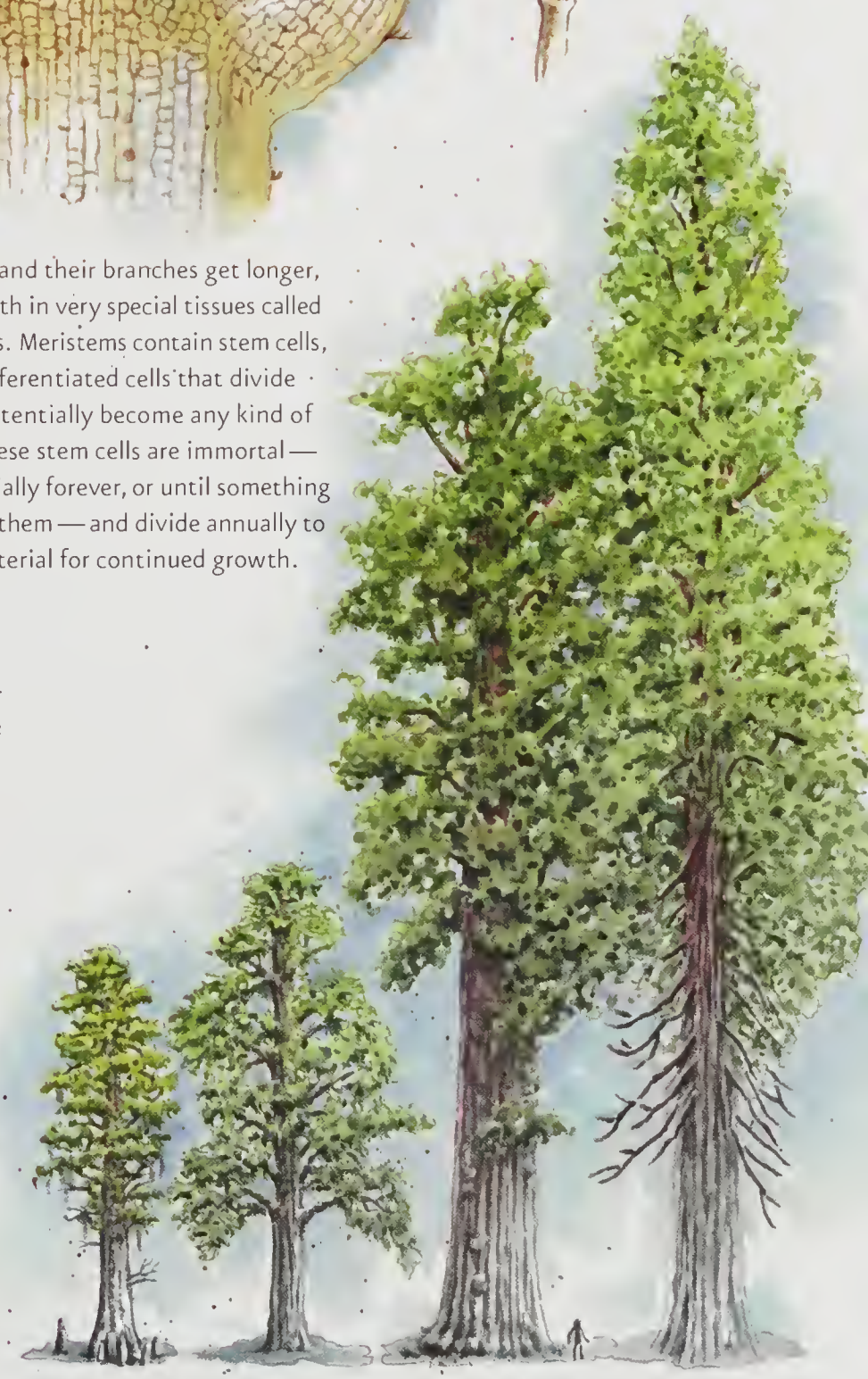
Trees get taller, and their branches get longer, because of growth in very special tissues called apical meristems. Meristems contain stem cells, which are undifferentiated cells that divide and that can potentially become any kind of plant tissue. These stem cells are immortal — they live essentially forever, or until something bad happens to them — and divide annually to produce the material for continued growth.

Trees get bigger around because of a second kind of meristem: the cambium. The cambium is a thin sheet of living tissue that surrounds stems and branches. It produces the conductive tissue, called the xylem, which conducts water up from the roots, and the phloem, which conducts the products of photosynthesis from one part of the plant to others. In temperate areas, trees lay down annual rings of xylem — light-colored spring wood and dark-colored summer wood — allowing us to age them by counting the rings. The great bulk of these ancient trees, however, is not living tissue but dead wood.



Bald cypresses and their giant relatives get so big because they live so long. Unlike most other trees, their apical meristem stem cells don't deteriorate with age and don't seem to accumulate mutations. The bristlecone pines of the Sierra Nevada carry this to the extreme — one has lived over 5,000 years!

ANCIENT BRISTLECONE



BALD CYPRESS · MONTEZUMA CYPRESS · SEQUOIA · REDWOOD

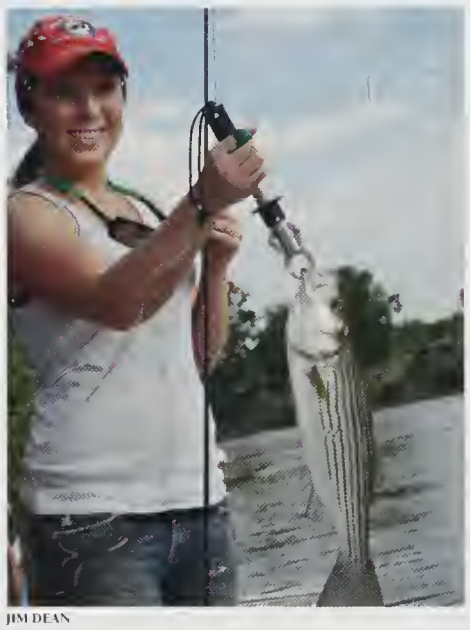
Early Bird Angling

written by Jim Dean

"I can't take it much longer," my new friend whined one day late last winter (we'd met recently after he moved down from New England). "I've got to catch something soon or I'm gonna go bonkers."

"Well, it's not too late to catch the flu," I kidded.

"I'm going to ignore that," he replied bleakly. "You realize that opening day of the trout season is still two months away, and it will be longer than that before bluegills and bass begin spawning."



JIM DEAN

"Yeah, I know," I said, "but my fishing buddies are already catching fish."

"Really?" he exclaimed. "Where I'm from, I'd be shoveling a snow tunnel to get the newspaper. You're still kidding, aren't you?"

"No, I'm not. In fact, you timed your move just about perfectly because some of the best fishing of the entire year around here is already getting started. Besides, there's often some fine weather in March—sometimes even in late February—and April can be delightful."

For the next hour or so, we talked about North Carolina's early season fishing opportunities, and I invited him on a trip, and later introduced him to fishing friends who could also take him. So, he didn't go bonkers after all, nor did he catch the flu.

"The period from late February through March may be one of the best times to catch a lunker largemouth"

If you're an avid fisherman who has lived here awhile, what follows will likely sound familiar. But novices and newcomers will at least get some idea of the many options worth checking out.

Let's start with the anadromous spawning runs in our Coastal Plain rivers because they offer such terrific early fishing—especially in the Roanoke, Tar, Neuse and Cape Fear rivers and their tributaries, among others. Hickory shad begin to show up in late February, and fishing for them is typically good through March. Catching 100 hickories a day from about 1 ½-to-2 ½ pounds is not unheard of. Small jigs (darts) and spoons fished on light spinning tackle (4- to 6-pound test) work great, but fly-fishermen using sinking lines also catch tons of hickories on brightly colored flies. The hickories are followed in April and May by the larger white (American) shad which average about 3 pounds, but can grow much larger. The same lures work, but heavier line is a good idea.

Along with the American shad, and in much greater numbers in many rivers, come striped bass (called rockfish locally). Their arrival in April is a major event in towns like Weldon on the Roanoke, and local businesses often close during the peak of the run in May. Live minnows, jigs, spoons and flies all work, and while many stripers (males typically) may average 2-to-4 pounds, some much larger females in the 10-to-40 pound range are caught.

In addition to shad and stripers, white bass, some hybrids and white perch also run up rivers to spawn each spring, and because many live landlocked in lakes, you can catch them in rivers and streams feeding those lakes throughout much of the state.

Mountain trout are also in the early season mix. Although the season doesn't officially open until the first Saturday in April on hatchery-supported waters, many streams, including those under delayed-harvest regulations, are open year-round under special regulations. The heavily stocked delayed-harvest streams are not only immensely popular, but are an economic boon to many localities.

Excellent tailwater trout rivers also exist in western North Carolina, Virginia and Tennessee, and they afford year-round, high-quality angling for wild trout that grow big on flies that hatch all year. In eastern Tennessee, the South Holston and Watauga rivers are widely considered the best trout streams in the East.

Years ago, it was thought that bass fishing during the cold months was a waste of time. However, today's experts and pro tourney fishermen have learned that the period from late February through March may be one of the best times to catch a lunker largemouth in North Carolina's many big impoundments.

It's true that bass don't spawn until the water temperature climbs into the mid-60s, but one of their more human characteristics is that they—like us—think about it a long time before they get around to it.

That means that even as early as February, bass are beginning to move to staging areas along dropoffs, creek channels and points. It's typically a gradual movement, but bass feed with increasing vigor as the water warms. A deep-diving crankbait, spinnerbait, pig'n jig or similar lure will catch bass in those staging areas long before late April and May when they begin spending most of their time in relatively shallow water fanning beds.

The N.C. Wildlife Resources Commission manages all these inland fisheries, and you'll want to check details on licenses, seasons, limits and other regulations before you go.

Alas, there's simply not space to cover all of North Carolina's many other spring options, including our vast saltwater fishery. But if you're just getting started fishing in the Tar Heel state, you're in the right place at the right time.

CRAIG GRITNER

Fiddlehead

IN THE MAY · JUNE ISSUE

JARED LLOYD

ECOLOGICAL ENGINEERS
Few animals can transform an ecosystem quite like a woodpecker, whose nest cavities throughout a forest become homes to creatures of all sorts and sizes.

GONE FISHING
There may not be two sweeter words in the English language than "Gone Fishing," even when a day on the stream results in few fish.

ART OF THE DECOY
Turkey decoys have come a long way in recent years. We offer insight and tips on what's available for hunters.

TO SUBSCRIBE CALL 1-800-786-2721
OR FIND US ON THE WEB AT ncwildlife.org

FSC www.fsc.org MIX Paper from responsible sources FSC® C101537

Lithography by PBM Graphics Inc., Research Triangle Park, North Carolina